

THE AUTOMOBILE

WEEKLY

NEW YORK—SATURDAY, MARCH 12, 1904—CHICAGO

10 CENTS

Packard

The record of 1 mile in 46 2-5 seconds, made by the Four-cylinder **PACKARD "Gray Wolf"** at Daytona, Fla., Jan. 3, is the **world's record** on cars of the Voiture Légère class.

In the Voiture Légère Model "L," 1904 **PACKARD**, is presented the same type of mechanism as that used in the **"Gray Wolf,"** and no motor car of its class equals it in speed possibilities, endurance powers, strength, reliability, and luxuriousness of style and finish. Price \$3,000. Other models at prices ranging from \$1,500 to \$10,000.

Send for illustrated descriptive literature and name of nearest agent.



Packard Motor Car Co. Detroit, Mich.

Member Association of Licensed Automobile Manufacturers.

New York Agents: Packard Motor Car Co. of New York, 217 West 59th Street, New York City.



Two New Automobile Tires



BILLY GAS LAMPS



first imported several years ago on the **Panhard** Automobiles, are now represented exclusively by

Smith & Mabley
Incorporated

511-517 Seventh Avenue, New York.

Unquestionably the finest Automobile Lamps in the World. Imitated everywhere.

Send for information and prices. Address Wholesale Dept.



GRA
Two
MA
C
LAS

LIBRARY of CON
Two Copies Re
MAR 12 19
Copyright
MASS
COPY

THE AUTOMOBILE

WEEKLY

NEW YORK — SATURDAY, MARCH 12, 1904 — CHICAGO

10 CENTS

CLEVELAND SHOW A GREAT SUCCESS.

Rivaled the Chicago Exhibition in Comparative Attendance and Public Interest—More Than 32,000 Paid Admissions — Sales Aggregate \$400,000.00.

Special Correspondence.

CLEVELAND, March 7.—After a record-breaking sale of 7,500 tickets during the day, the Cleveland Automobile Show closed at 10.30 o'clock Saturday evening and at midnight the lights were turned out on what had been the

most successful local show in the history of the automobile industry. It took only a short time to clear the hall and early Sunday morning five carloads of machines had been loaded and were on their way to Buffalo, where the local show opens

this evening. Exhibitors were profuse in their congratulations to the members of the Cleveland Automobile Club and united in the assertion that the show had been the best local show ever held.

William E. Metzger, of Detroit, who



INTERIOR OF THE GRAYS' ARMORY, CLEVELAND, DURING PROGRESS OF CLEVELAND'S MOST SUCCESSFUL LOCAL AUTOMOBILE SHOW.

managed the Detroit show the week before, acknowledged that Cleveland beat his city from the standpoint of enthusiasm. He said that while the Detroit show had been more spectacular in decorations and illumination, the Cleveland show far surpassed it in attendance, genuine interest and sales. Another prominent tradesman who has attended every show held in this country, stated that the public interest is greater in Cleveland than in any other city he knows and he thought the Cleveland show surpassed even the Chicago show, which he characterized as largely a local affair.

One opinion which was expressed by a number of prominent exhibitors was that local shows should be open only to those concerns that have branch stores or agents in a city. Out-of-town concerns that have no agents and contribute nothing to the industries of the city, come to a show like that held in Cleveland and make a number of sales. Purchasers who buy cars built by such concerns frequently experience great difficulty in having their cars taken care of and in case of the breakage of parts they are obliged to lay up their cars for a considerable time while new parts are being secured from the factory, and after the parts are received the repairs must be made by people who are not familiar with the car.

PAID ADMISSIONS TOTAL 32,168.

The show management reports that the admission sales for the week aggregated 32,168, an average of 5,361 per day. As a matter of fact, the attendance was much larger than this because the management was extremely liberal with passes. Friday evening it might have been considered an impossibility to crowd any more people into the Grays' Armory, but Saturday night it was even worse. Every aisle was packed and about every exhibit was gathered a crowd that blocked the channel and refused to be swept along with the tide. The demonstrators were visible only to the few who lined the inner circle.

While the actual sales may not have been quite so numerous as they were last year, the direct benefits of the show will be much greater. At the previous show, manufacturers were far behind on orders and it was announced that unless orders were placed at once, cars would be very late in delivery and might not be secured at all. This year the public is aware that conditions are different and prospective buyers are looking over the field very carefully before placing their orders. Many no doubt made up their minds as to their wants during the show, but refrained from paying their money until they could have a better opportunity of examining the cars. But the sales were very satisfactory. Every exhibitor reported actual sales. In a number of cases the exact number could not be determined Saturday evening because the salesmen had not filed their reports, but a careful estimate indicates that about 300 cars valued at approximately

\$400,000 were sold on the floor during the week.

SOME OF THE MANY SALES REPORTED.

The Ohio Oldsmobile Company probably led in number of sales, as it did last year. Manager Ralph R. Owen reported sales of forty-one light Olds runabouts, twelve of the \$750 machines, thirty of the touring cars, sixteen Franklins, three large motor launches and twelve of the small fishing launches which he exhibited; a handsome total of \$92,000 worth of automobiles and launches. This did not include several contracts made with agents as well as sales made by A. Auble, Jr., who handles the Olds in Akron, and Sidney Black, manager of the Cincinnati branch, who made sales with several people from Southern Ohio.

The White garage sold fourteen cars, one a limousine car, and eight fitted with tops, a total valuation of \$30,000.

The Ohio Motor Car Company sold seven Stearns, five Columbia gasoline cars and several of other makes, the exact number not being known at the time of the closing of the show. One of the Stearns cars will be a special \$5,000 semi-racing machine purchased by Kenyon V. Painter, who has done considerable racing.

The Winton people had not figured their sales. Sales Manager Shanks said that the missionary work done during the week would easily result in the sale of sixty cars and he thought the actual sales were about half that number. The Royal Motor Car Company, through the T. C. Whitcomb Company sold five two-cylinder and four four-cylinder cars, aggregating \$25,000. The Automobile & Garage Company sold five Autocar runabouts, three touring cars, three Packard touring cars, one Waverley physician's wagon, and one Waverley station wagon. Before the opening of the show it sold sixty-seven Autocars to agents in various cities in Northern Ohio.

The Price Brothers Carriage Company sold fourteen Baker electrics of various styles. Four were the new park survey model which attracted attention as one of the handsomest electric vehicles ever built. The Baker stanhope was also a good seller, being probably the most popular machine for ladies' use ever sold in Cleveland. The Baker people were not among the exhibitors at last year's show, and Saturday evening Mr. Baker admitted that he had underestimated the value of a local show.

The Orient Buckboard will be much in evidence in Cleveland another season, as Harry S. Moore, who exhibited the little machine, sold about twenty of them to local people and thirty-seven others to agents in neighboring towns. The Star tonneau which he manufactures himself, also attracted much attention. Sales Manager Kirkpatrick, of the Peerless Motor Car Company, reported the sale of ten cars. A special car goes to Horace Andrews, president of the Cleveland Electric Railway Company, who will use it largely for rail-

way inspection purposes. R. H. Magoon sold four Pope-Toledo cars, one of them a \$3,500 four-cylinder machine and the others two-cylinder cars. The Thomas people of Buffalo sold six of their three-cylinder touring cars, a machine which attracted much favorable comment. Semour Brothers, who have opened a new garage at 547 Prospect Street, disposed of four of the little Michigan runabouts. Paul Gaeth, with the Gaethmobile, made several sales and reports fine prospects of selling all he can build in his local factory. The Automobile Top & Supply Company, 57 Bright Street, made a good start in the field and disposed of several of the Sandusky Couriers runabouts. The Fredonia Manufacturing Company, of Youngstown, made an excellent showing with the Fredonia and sold five cars.

ROTARY ENGINE ATTRACTS ATTENTION.

Nothing in the line of mechanical novelties attracted more attention and wider discussion than the model of a rotary gas engine exhibited by Otto Konigslow, who has been working for many months on this device. While he does not claim to have perfected the machine, he asserts that it is thoroughly practical and has many advantages over the ordinary reciprocating type and many of the experts who examined the working model during the week are inclined to agree with him.

Emil Grossman of New York, made many friends for his new Continental spark coil, which follows closely after French design. It is made in all sizes and with any finish. Both the primary and secondary coils are wound with silk. The core is made from Swedoh steel of high magnetic quality.

The Bullock-Beresford Manufacturing Company, of Cleveland, came in too late for mention last week with its exhibit of Bullock igniters and spark coils, goods which are favorably known to manufacturers for their efficiency and good workmanship.

BANQUET TO EXHIBITORS.

Thursday evening the management tendered a smoker and luncheon to the exhibitors and attendants. About 100 sat down to the tables and enjoyed an excellent menu and listened to witticisms from such well-known tradesmen as "Governor" Castle, Ezra Kirk, Walter Baker, Charles Shanks, R. E. Olds; and George Collister.

THERE is grim irony in the gift which has just been made to the chief constable in East Essex, near London, Eng. It takes the form of an automobile and, though the price is \$1,750, it will cost the authorities nothing, automobilists who have traversed the country having paid for it in fines. Thus they may on some future occasion have the pleasure of being pursued by the car which they themselves have provided for scorcher hunting.—*Cleveland Plain Dealer.*

DUAL BOSTON SHOWS OPEN ON MONDAY.

Symphony and Horticultural Halls to Be Filled With Automobiles and Motor Boats, with One Ticket Admitting to Both Exhibitions.

Special Correspondence.

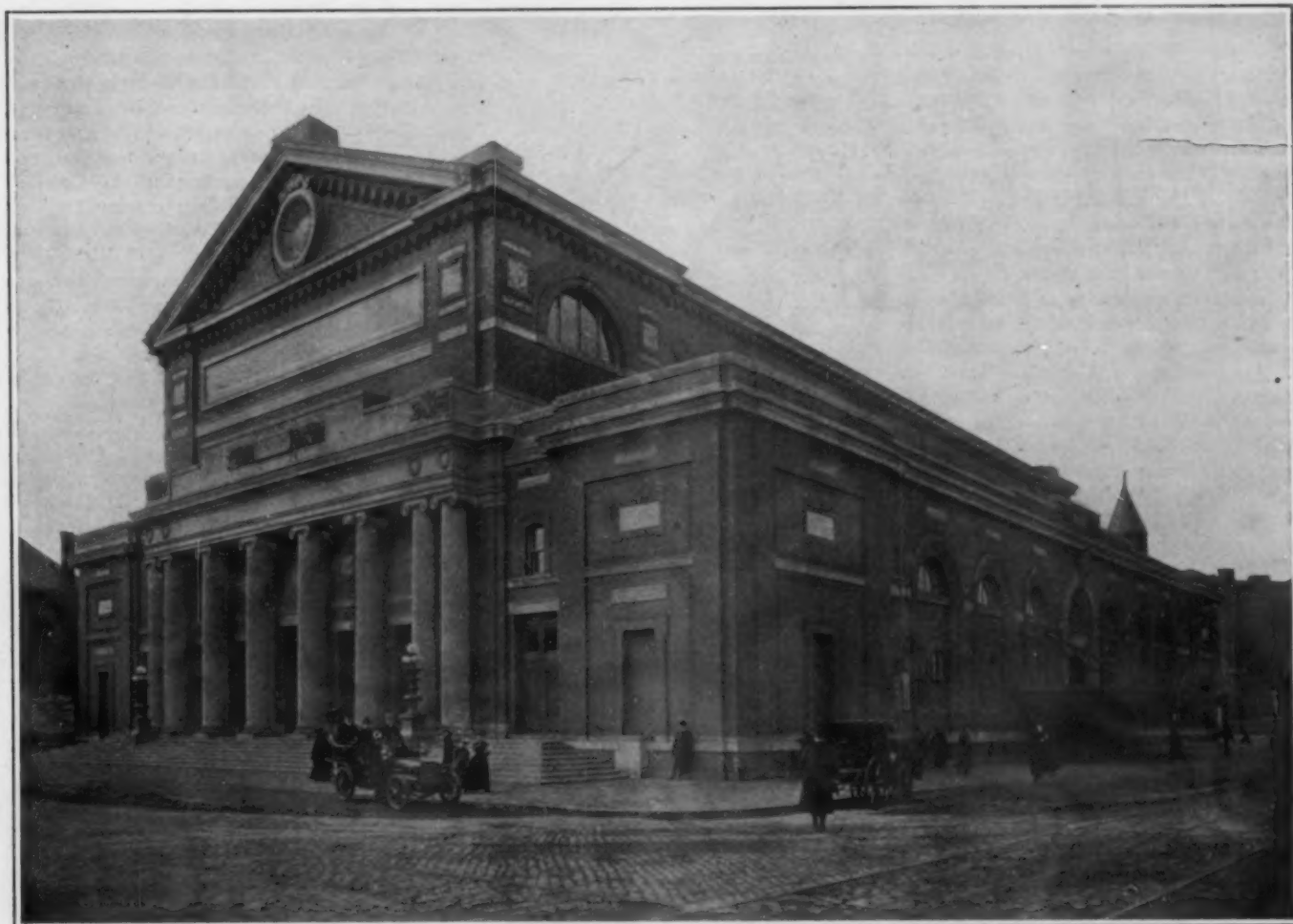
BOSTON, March 8.—Residents of the Hub are to take their annual view of automobiles and launches the same time this year, the two big shows opening at the same time in separate but adjacent buildings, with one ticket admitting to both. The principal exhibition will be the one in Symphony Hall under the management of

allotted. He conceived the idea of having an auxiliary show in the Horticultural building, and as many of the applicants whose letters had come in late were motor boat people, he hit on the plan of calling the second show an auto boat exhibition. As a result, considerable interest in motor boats has been started in and around Boston, and the show seems likely to give a great impetus to aquatic automobiling this season.

Both shows will open Monday, March 14, and continue through March 19. A ticket issued by the Boston Automobile Dealers' Association costing fifty cents will admit to the dealers show in Symphony Hall, which is to be "the" automobile show, and

tunity for easy and leisurely examination of the exhibits. No delivery vehicles are allowed in the main hall, owing to lack of space. One or two may be found in the outer corridors of the tuning room, but most of them will be outside the building. In fact, the "outdoor" show will be a special feature, for every Boston exhibitor will have from two to five automobiles on hand for demonstration, and the long stretches of broad, smooth avenues, paved much of the way with asphalt, will offer fine opportunities for street work.

The exhibition across the avenue in Horticultural Hall will take many individual cars and most of the tire and accessories exhibits. The motor boats will be the



HORTICULTURAL HALL, COPLEY SQUARE, BOSTON, WHERE COMBINED AUTO-BOAT AND OVERFLOW AUTOMOBILE SHOWS WILL BE HELD.

the Boston Automobile Dealers' Association, which ran a highly successful show last season in the same hall that netted a handsome profit to the ten members who took what was then a hazard in backing it.

Just across the avenue from Symphony Hall is the new Horticultural Hall, a building almost as popular with the discriminating public; and here Chester I. Campbell, manager for the Dealers' Association, found that space could be provided for the automobile dealers and manufacturers whose applications for the other show were received after all the space there had been

this ticket will carry with it a coupon that will admit the bearer subsequently to the auto-boat show in Horticultural Hall. A ticket issued by the management of the Horticultural Hall show will admit to that exhibition only, but will cost only half as much as the automobile ticket.

The major part of the automobile exhibits will be in Symphony Hall. All the dealers who were there last year have taken as much or more space this year, and many will have the same locations. It will be a handsome show, but the exhibits will be crowded and there will be little oppor-

main attraction, and there will be ten or a dozen different makes on exhibition, although the number of individual boats may be larger. The New York contingent of speed launch makers will be well represented, the *Vingt-et-Un* and *F. I. A. T.* racers heading the list of auto boats. The H. H. Buffum Company of Abington is understood to be preparing a new boat, and A. W. Toppan of Boston will show some of his power dories and Truscott launches.

A feature of the Boston situation at present is the way in which the daily press has taken up the automobile. Last year's

show brought a generous amount of advertising to the only two papers that had followed motoring in this city with special departments all the year around, and this served to bring a third paper into the field with a column of trade news once a week. Several other dailies have been taking an interest in the coming show during the last week or two, with the result that the dual exhibition has been widely advertised. One paper has been sending out special copies of its Saturday afternoon automobile editions for the last three weeks to every licensed automobile operator and dealer in the State, and two of the others will get out special sections for their editions just before the opening of the shows.

BOSTON DEALERS ADD FREIGHT.

Following the recent doubling of freight rates on automobiles, the fifteen leading automobile dealers and branch house managers of Boston have signed the following agreement which is hung up in all of their offices: "To the Public:—The terms for all automobiles being F.O.B. their respective factories, we, the undersigned members of the Boston Automobile Dealers' Association, agree to sell cars at list prices plus freight charges on same from the factory to Boston." The members of the association are the Pope Mfg. Co., Winton Motor Car Co., Peerless Motor Car Co., Thos. B. Jeffery & Co., Columbia Motor Vehicle Co., Locomobile Co. of America, White Sewing Machine Co., P. A. Williams, C. S. Henshaw, F. E. Randall, Rossell Drisko, A. R. Bangs, Dowling & Maguire, Reed-Underhill Co., and Moore & Smith.

KENSINGTON CO'S AFFAIRS.

BUFFALO, N. Y., March 7.—It is understood an effort is to be made to force the Kensington Automobile Manufacturing Company of this city through a course of bankruptcy proceedings. The company has had much trouble recently, an assignee having been appointed in county court last November and the property sold at foreclosure on January 26, to the German Bank of Buffalo for \$20,000.

The petitioning creditors who want the concern declared bankrupt are, P. A. Williams and W. G. Morse, of Springfield, Mass.; the Hussey Drop Forging & Manufacturing Company, of Cleveland, Ohio; the Briscoe Manufacturing Company, of Detroit, Mich.; the Froh Rubber Company, of Chicopee Falls, Mass.; and the P. R. Mitchell Company of Cincinnati, Ohio. All these firms sold goods to the Kensington company.

An act of bankruptcy is alleged in the general assignment to Albert Schelling on November 3, 1903. The president of the Kensington company is William J. Knowles, and Frank D. Thorne is secretary. At the time of the assignment the directors in office were William J. Knowles, I. H. Horton, C. B. Gaskill, Alexander J. Porter and Eugene A. Georger.

Local Show in Progress in Buffalo.

Comprehensive Exhibition Opened Monday With a Blast of Horns—Artistically Decorated and Well Attended.

Special Correspondence.

BUFFALO, March 7.—The local automobile show opened in Convention Hall to-night and will continue throughout the week. Nearly all of the leading manufacturers of the country are represented by cars displayed by agents or retail establishments. The opening was a big success and augured well for the remainder of the week. The hall has been artistically decorated with bunting and flags, and some of the manufacturers' booths are bowers of beauty. All vied with one another to produce something original that would attract visitors. Convention Hall is the largest hall in Buffalo, and there is plenty of floor space, giving the exhibitors every opportunity to show their cars to advantage.

Saturday the exhibitors worked hard to get everything in good shape for today. All of the machines were run into the building on Saturday and Sunday and finishing touches were given to the many booths. Dai H. Lewis and Fred J. Wagner, managers of the show, have worked energetically to make the event one that will long be remembered by Buffalo automobilists, and they were ably assisted by the members of the Buffalo Automobile Club.

Information has been received that during the week a party of motorists will come from Toronto, Hamilton, St. Catharines and London, Ontario, and that other Canadian cities will send delegations. Rochester, Niagara Falls, Lockport, Batavia, Dunkirk, and other towns in New York have also announced that they will be represented.

A. J. Picard, the official starter for the A. A. A., arrived in Buffalo Sunday to attend the show. Mr. Picard will show a Darracq touring car and a Darracq chassis, which will be the only French cars at the show. Many other well-known trade members arrived on Sunday and this morning, and the hotels are crowded with out-of-town visitors.

SHOW OPENED WITH A DIN.

The show opened amid the loudest din that was ever created in a building in this city. Men were stationed at every automobile horn, and at a signal they simultaneously started a tooting and honking that was terrific. The decorations of Convention Hall were completed this morning and some of the exhibitors were doing business at noon. One of those on hand early was John Poole, who represents the Olds in Europe. Every convenience and accommodation for the exhibitors and the sightseers has been arranged by the management, and nothing will be lacking but the public restaurant.

The most prominent exhibitors and the

cars and sundries shown by each are as follows:

Flint and Kent, an attractive display of automobile costumes for men and women; Clarence E. Becker, the Thomas Auto-Bi; Walter J. Willoughby, the Crestmobile; Ephraim Bros. the Elmore car, Continental tires and Demmerle & Co.'s automobile apparel; Meadows & Hafer, the St. Louis runabouts and 20-horsepower machines; Duquesne Motor Car Co., the Duquesne Voiture Legere; Buse Auto, two White steamers and three Northern gasoline cars; Alex. Weller Co., the Stevens-Duryea; Buffalo Automobile Exchange, the Haynes-Apperson, two-passenger touring car, and four-passenger tonneau, and Apperson Bros. cars; Buffalo Gasoline Motor Co., the Buffalo marine engines; Lackawanna Motor Co., Lackawanna marine motors in various sizes; O. K. Machine Works, the Red Jacket automobile and a display of specialties and sundries; Kleinhans Clothing Co., a full line of automobile clothing and wearing apparel; George N. Pierce Co., five Pierce touring cars, the Pierce Arrow and Pierce stanhope; Centaur Motor Co., the Cadillac, Yale and Franklin cars and auto-boats; (the company will also have fifteen demonstrating cars outside of the building); D. H. Lewis Co., an extensive line of Rambler cars, which makes one of the best displays at the show; J. A. Cramer, four Ford machines including the low-priced Ford two-cylinder car; Pope Motor Car Co., W. A. Lutz, manager, the Toledo car; G. H. Poppenberg, a big line including the National electric, National gasoline, Sintz, Santos-Dumont, Queen and Michigan runabout; Buffalo Garage Co., a full line of Thomas cars, including the Thomas Flyer and Thomasine, which were exhibited at the New York and Chicago shows; Buffalo Motor Car Co., Columbia and Pope cars; Electric City Cycle Co., the Glide car and the Reliance motorcycle; Queen City Automobile Exchange Co.; the Orient Buckboard; W. C. Jaynes, the Oldsmobile and Winton; Roe Auto Co., Peerless and Autocar; W. U. Watson, the Wayne car; P. W. Eigner, the Waverley electric and Belvidere runabouts; J. A. Worthington, Indian motorcycles; Standard Oil Co., oils for automobiles; Covert Automobile Co., of Lockport, shows the Covert runabout; Prescott Automobile Co. of New York, the Prescott steamers; 20th Century Mfg. Co., of New York, a line of automobile gas and oil lamps; Jones-Corbin Co. of Philadelphia, the Jones-Corbin runabouts; Emil Grossman of New York, automobile sundries; Badger Brass Mfg. Co., of Kenosha, Wis., a line of Solar gas and oil lamps.

EAGER FOR AUTO BOATS.

Germany Seeks American Entries for Kiel Races and Exhibition.

A new and important feature of the annual regatta week at Kiel, Germany, which begins this year on June 22, will be a series of races for motor boats, including all modern types of steam, benzine, petroleum, and alcohol motor launches and yachts. The boats will be divided for the competition, according to tonnage and motive power, into three classes or categories, with prizes in each class, and a valuable trophy to be given by the Emperor William to the winner of the principal event. The conditions of admission and rules and stipulations governing the several contests are now in preparation by the German Automobile Club, whose headquarters are 4a Sommer Strasse, Berlin, and will be given in a subsequent report as soon as they are announced.

The enterprise is inspired and directed by the Emperor, who has ordered for his own entry in the contests a motor boat which is now under construction by a firm at Bristol, R. I. In view of the recognized pre-eminence of American build-

sent at Wannsee, and the competition, which was mainly between boats of German, French, and Belgian construction, failed to reach the standard of a representative international display.

This year the competition will be under different auspices and on a much more imposing scale. Its purpose will be to bring together the work of the foremost motor-boat builders in all countries under circumstances which will test and demonstrate their relative speed, economy, and other merits under conditions which will give to a victorious record a world-wide significance.

GEORGIA'S FIRST RACES.

Despite Bad Weather 2,500 Spectators Watch Oldfield-Hausman Match.

Special Correspondence.

SAVANNAH, Ga., Feb. 29.—It seemed that the first automobile race meet held in Savannah was doomed to ill fortune from the time it was first planned. After a double postponement from February 13 to the 22d and then to the 26th, caused by heavy rains, the races were finally pulled

heat—Won by Oldfield, time 5:50; Hausman, time 5:55.

One-mile race—Won by Hausman, time 1:03; Oldfield second, time 1:07.

Three-mile race—Won by Hausman, time 3:05; Oldfield, time 3:16.

Officials of the race were: Judges, George W. Fiedinn, H. C. Battey, and Dr. Boughton; announcer, Charles Saussy; starter, T. A. Bryson; timer, O. Monclef.

PROMPT ACTION WANTED.

Changes in Hill and Cocks Bills Cause Much Delay.

Special Correspondence.

ALBANY, March 8.—Senator Hill has amended and corrected his automobile bill so much that it has been reprinted four times. The Assembly bill has been amended as many times and reprinted and now Assemblyman Cocks has another amendment to place in it today or tomorrow which will place the penalty for violation at "not to exceed \$100," instead of fixing a minimum fine of \$25, as at present.

There was also a "not" left out in the last reprint of the Cocks bill, which has



FAIR GROUNDS TRACK AT SAVANNAH, GA., DURING OLDFIELD-HAUSMAN MATCH RACE.

ers of motor boats of all classes, it is especially desired in Germany that they take an active part in the competitions at Kiel and make a display there which shall worthily represent their high standing in this interesting and important class of craft.

In June, 1902, there was held at Wannsee-on-the-Havel, near Berlin, a special international exhibition of motor boats with special reference to the types and sizes best adapted to use upon inland lakes and rivers. A special appeal was made to American builders, the managing committee even going so far as to guarantee the sale of any representative American-made boat or motor which might be exhibited there; but all the leading American builders were stocked with orders covering their whole product for the year, and were too busy with actual business to send over and exhibit in Germany, boats which had been already sold in the United States, and so the United States was wholly unrepresented

off on the afternoon of February 26. They were a great success, for though threatening clouds promised a wet and nasty day, they did not deter an enthusiastic crowd of fully 2,500 people from visiting the track at the Fair Grounds to see and wonder at the marvelous speed at which the big cars were driven.

E. H. Hausman, with old "999," was a little the favorite and the way he handled his machine was a surprise to everybody. It seemed as though he had lived all his life right in the seat of the machine and a 1:03 pace on a 1:05 track was a sinecure for him.

Of course the people came to see Barney Oldfield, and all appeared well pleased with the exhibition from start to finish.

The program for the day had to be cut short of amateur events and was finally carried out as follows:

Five-mile match race, best two out of three, first heat—Won by Oldfield in Bullet No. 3, time 5:40; Hausman, in Ford "999," second, time 5:50. Second

been held on the desk since February 23, when it was ordered to a third reading. This "not" omitted makes the restriction of speed at intersecting highways of no effect.

Assemblyman Cocks says after these amendments he will pass his bill even if its penalty system differs from that of Senator Hill's bill. The Hill bill does not appear to include the provisions of the Cocks bill relative to speed across dams used as causeways and differs in other respects from the Cocks bill, so that whichever bill passes there is danger of a clash.

President W. H. Hotchkiss, of the New York State Automobile Association, is expected here this week to try to settle all differences.

Senator Armstrong, of Rochester, objects to the auto bill because it does not allow every town and village to adopt its own regulations as to speed.

It is expected that an agreement will be reached on all disputed points this week and that next week the bill may pass.

Road Making in Massachusetts.—I.

History of Work Under the State Aid Laws.—Duties and Methods of the Commissioners and Preliminary Reconstruction.

By ASA GODDARD.

Massachusetts has the reputation, and perhaps not without reason, of being one of the most conservative States in the Union. But when her people become aroused to the necessities of any public situation, the Old Bay State lends her aid, credit and means in a most liberal manner. She has for the past ten years, and is today, spending more money and in a more liberal manner for good roads than any other State in the Union.

In 1893 the Legislature in Massachusetts passed a bill in the interest of improved roads, and provided for the appointment by the governor of three competent persons to be known as the Massachusetts Highway Commission, their respective terms of office to be so arranged and designated at the time of their appointment that the term of one member should expire in three years, one in two years and one in one year, the full term of office to be thereafter for three years, each to receive a salary of \$2,000 a year.

DUTIES OF THE COMMISSION.

The duties of the Commission under the act of 1893 were to make investigations relating to roads throughout the State, compile statistics, prepare maps, collect and collate information concerning the geological formation of the State so far as it related to material suitable for road building.

This act also provides that they could be consulted at all reasonable times without charge by county, town and city officials having care and authority over public roads. They were also required to make an annual report to the Legislature of their doings.

Under this act there was but very little done except gather statistics and compile them, as the law was not drawn in a form conducive to construction work, and in 1894 a large portion of the bill of the previous year was repealed and a new bill passed which was in all probability the most liberal good-roads' bill ever passed by any legislature in the United States. Under this act any board of county commissioners, mayor and alderman of a city or the selectmen of a town could petition the State Highway Commission to consider the taking of such roads as in their judgment public necessity and convenience required, and such of these petitions as the Highway Commission deemed worthy of consideration were made State roads, constructed and maintained at the expense of the commonwealth with the exception that 25 per cent. of the cost of construction was to be borne by the county in which the road was located.

RIGHTS OF CITIES AND TOWNS.

The 1894 bill also provided that any city or town within whose borders a State road was laid out could have the first privilege to contract with the Commission for the work of construction. This privilege was given in order to stimulate local interest in the movement and educate local authorities in the advanced methods of building good roads. This law provides that a town or city may contract for the construction of State roads at prices that may be agreed upon by conference between the State Commission and local authorities, and in case they do not agree, then the work is advertised and let to the lowest responsible bidder.

Under the original act the local authorities had thirty days in which to accept or reject the prices offered by the Commission for construction work, but in recent years that has been cut down to ten days.

In order to prevent unfair distribution of the work from year to year, the law provides that not more than ten miles of road be built in any one county in any one year. It also provides for a public hearing before the Commission in every county annually.

The law of 1894 carried with it the first appropriation of \$300,000, and in no year since have we failed to get an annual appropriation of from \$250,000 to as high as \$800,000, until last year, 1903, our legislature appropriated the sum of \$450,000 a year for five years, so we are in a fair way to keep up the good work for the next four years at least.

The law as it stands today provides that each town or city having State roads is to pay \$50 per year per mile toward the cost of maintenance. The State pays the balance. Not a great hardship on the towns and cities.

PURCHASE OF MACHINERY.

The State has also purchased road building machinery from time to time, and now has seventeen steam rollers and several stone crushers, which towns or cities may have the use of, free of charge, for use on local work. This is a great help to towns that want to put down a macadam street occasionally, but have not enough of such work to warrant the purchase of a crusher or steam roller.

Later laws provide for the expenditure of 5 per cent. of the annual appropriation in assisting small or poor towns in improving sections of road demanded by public necessity.

A recent enactment also provides that the Commission may expend 5 per cent. of the annual appropriation in assisting large towns of 10,000 or 12,000 inhabitants

under the condition that each of these towns expend an amount equal to that allotted to them by the State.

In many other ways the State has assisted towns in road work, by making plans, furnishing engineers for surveying and supervising constructions, and giving free advice as to methods and material pertaining to local conditions.

METHODS OF THE COMMISSION.

The method of handling the work by the Commission is very simple, and yet such as to keep the work well in hand.

For the convenience of the three commissioners, the State is divided into three sections and each commissioner looks after a section and determines all minor matters without reference to the full Board, but all matters of importance are referred to the full board, which meets weekly or oftener as the occasion may require. A secretary is employed, with necessary clerks and stenographers, also a corps or draftsmen and field engineers located at the offices of the Commission or controlled therefrom by the secretary or first assistant engineer.

The State is further divided into five sections, each section being under the control of a division engineer and an assistant, both of whom reside in their division.

The usual course leading to the construction of a section of State roads is for the town or city desiring it to petition the Commission to build a State road over some existing line of travel, and on receipt of such a petition the Commission gives a hearing. If after investigation on the part of the Commission, it seems to them advisable to build a State road on the location, they ask their division engineer for information regarding grades, lines, drainage, bridges, materials available and approximate estimate of costs.

As soon as these reports have been discussed, a field party goes over the location and makes a survey. The notes of the field party are returned to the office and plans made from them. On these plans all grades above 5 per cent. are eliminated either by grading or change of location.

CONTRACTS ARE LET.

When plans and specifications are prepared, the contract is let and work commenced. Here is where the road builder gets "up against it," as there are no two sections of road that would permit of the same treatment and produce the same results. There are all kinds of soil and conditions to be met with, and only by expert judgment can the best results be economically obtained.

On one contract we are building on clay that requires the most careful drainage. On another we find the most lively kind of sand which it is impossible to keep still long enough to cover it with a material suitable for a road. And on the next we are likely to find both clay and sand with variations.

The contractor is required to grade the roadway to conform in a general way to

the territory through which the road passes, making cuts only where necessary to avoid leaving any hills with a grade exceeding 5 per cent., or in other words 5 feet rise in a distance of 100 feet. Fills are almost invariably made where the road runs through low or wet land sufficient to elevate the finished road at least 4 or 5 feet above the level of any standing water. The section of road to be built is graded about 21 feet wide in cuts and about 25 feet wide on fills.

METHODS OF RECONSTRUCTION.

All old bridges and culverts are torn up and rebuilt in accordance with standards of different forms adopted by the Commission, different standards being specified according to the necessity of the location. For a small stream, or where there is no stream, but where surface water collects during heavy rains or spring freshets, vitrified clay pipe is used in sizes of from 8 inches to 36 inches in diameter, with ends of masonry, or when the drain has to be laid close to the surface of the road, cast iron water pipe is substituted.

Where an opening is required from 2 to 5 feet, a culvert is built of stone masonry with granite covering stone not less than 12 inches thick, the ends of which are constructed of substantial and roughly dressed granite laid in cement mortar.

Four or five years ago I suggested to one member of the Commission that a great many of these culvert ends might be built of concrete. Experiments were made and for the past two or three years nearly all the small culvert and pipe ends, and even in many cases the entire culverts are built of Portland cement concrete.

(To be continued.)

HIGHWAY DATA WANTED.

Wiley Bill Authorizes Investigation Looking to General Road Improvement.

Special Correspondence.

WASHINGTON, March 7.—Representative Wiley of Alabama is the author of a resolution now pending in Congress which provides that the Secretary of Commerce and Labor be authorized to have the Director of the Census investigate the subject of public road construction in the United States, and to obtain and compile all available statistics from the different States, counties, and municipalities that may tend to show the cost of construction and also of maintenance of roads built under legislative authority during the past decade. It also authorizes investigation of the amount and character of the indebtedness incurred, when and how payable, and the ascertainment of those States whose constitutions prohibit them from engaging in works of internal improvement, as well as those whose constitutions permit them to authorize the issue of bonds for the construction of highways.

It is provided that when these statistics have been compiled, they shall be pub-

lished in the form of a bulletin for the information of the public in connection with the bills pending in both Houses of Congress looking to a uniform system by which better post-roads will be constructed throughout the country and more efficient mail facilities thereby furnished to the people.

The resolution was referred to the Committee on Agriculture for action.

GOOD ROADS LEGISLATION.

Mr. Shattuck Believes the Brownlow Bill Will Pass Congress After Dec. 1.

Although energetic efforts have been made to pass the Brownlow-Latimer bill, now before Congress, it is not likely that it will go through this session. Nevertheless, Albert R. Shattuck, former president of the Automobile Club of America and now chairman of its good roads committee, states that the bill is so valuable an addition to the legislative measures of the country that it will win out after the Presidential election.

"As is generally known," said Mr. Shattuck, "the Brownlow bill distributes \$24,000,000 on road improvements throughout the country, each State receiving a share in proportion to its population. New York State would receive \$2,108,000 while the minimum amount for a State is \$250,000.

"Leaders of the Republican party evidently think that it would not be good politics to pass the Brownlow bill before the Presidential election, preferring to keep appropriations to as small an amount as possible. A majority of the agricultural committees in the Senate favor the bill and will so announce within a few days.

"Although the Senate will probably pass it, I do not believe it will be reported in the House at this term. However, the present Congress does not adjourn until March 4 and after December 1, I think the bill will be passed. It is now known as the Brownlow-Latimer bill, the last named gentleman having introduced it in the Senate.

"As far as New York State is concerned," continued Mr. Shattuck, "it would look as though Governor Odell had changed his mind as to the value of good roads and had decided to oppose the farmer in a matter that is of vital importance.

"A year and a half ago, Governor Odell told me that he considered the matter of public road improvement just as important as the canal question and in his last message said he was favorable to the improvement of roads. Now all this is changed and he does not display the same enthusiasm.

"Such an interest is being taken in good roads that 4,500 miles have been petitioned for. Under the present appropriation it would take thirty years to complete this mileage, as the appropriation permits of the construction of only 150 miles a year."

Mr. Shattuck and his associates on the good roads committee have been doing

excellent work toward improving the highways in the city, the State and throughout the country, although comparatively little about their efforts has found its way into print.

MOTOR WAGONS FOR CITY USE.

New York's emporium known as the Fourteenth Street Store will use automobiles very largely in delivering goods. Property has been taken at 335-341 West 16th Street, where ample accommodations will be provided for auto trucks and delivery wagons, as well as for horses and horse-drawn vehicles.

In speaking of the matter, L. A. Goldstone, architect for the Fourteenth Street Store building, said that henceforth there would be considerable building of this class.

"As experience with the automobile progresses, the experimenters are more and more thoroughly impressed with the advantages to be gained and are therefore gradually taking up the use of the horseless vehicle," said Mr. Goldstone. "There is great economy of room in the use of the automobile. One machine takes up only half the room that is needed for a team and wagon. It does not have to be fed and never gets sick. With care it will outlast a horse. It can be turned in its own length, and its home is a far more desirable structure for business districts than the average home of the horse.

"This rapid evolution has an important bearing on real estate in the business centers, because it makes much property available for improvement for other purposes than stores."

TALKED OF SCOTLAND TOUR.

Angus Sinclair, overflowing with humorous stories and anecdotes, entertained about thirty-five members at the rooms of the Automobile Club of America on Tuesday night with an illustrated talk on his automobile trip in Scotland. Mr. Sinclair is unusually well informed on the history of that country, and had a good story to go with every picture shown on the screen. Those in attendance included: Winthrop E. Scarritt, Henry C. Cryder, Clarence A. Postley, Angus Sinclair, Frank Eveland, F. A. La Roche, George F. Chamberlin, George B. Goldschmidt, J. V. Black, H. M. Swetland, George A. Morrison, J. McMillan Hamilton, Alan H. Whiting, Fred. B. Cochran, W. H. Hall, Orrel A. Parker, J. E. Woodbridge, Bertrand L. Taylor, Dr. Calvin T. Adams, C. S. Towle, Percy Owen, Geo. B. Adams, Louis R. Adams, Jefferson Seligman, A. H. Chadbourne, F. G. Webb, L. Spencer, Jr., B. L. Taylor.

THE DAYTON Automobile Club has elected trustees for the ensuing year as follows: Dr. C. A. Bonner, C. B. Wolf, Albert Thresher, A. M. Dodds, Carl Bauman, Harry Cappel, and John Kiser. At a meeting to be held soon the trustees will elect officers.

Desirable Improvements on Motor Bicycles.*

By MERVYN O'GORMAN.

When I was told that this title had been selected for me, it became my duty to invent improvements as quickly as possible, and I called to mind a remark made at the Society of Arts by an eminent patent expert: "Any fool can make an invention, but it takes a clever man to work it out and a genius to sell it." Those who sell motor bicycles will, I hope, accept the compliment to their genius in selling them, while I claim the excuse that my mandate from the committee is only to play the fool.

It is almost impossible to go out for a ride and not come back home with the outline of an invention, and I fancy some of our "geniuses" have had more suggestions of desirable improvements than they know what to do with, so I leave it to you to decide whether or not my proposals conform to my title—whether or not they are desirable.

Weight.—If we had an explosion turbine, and if the gain of weight and space were proportionate to the reduction obtained in turbine steamships, we would have a 2-hp. engine and gear weighing, not 30 pounds, but 5 pounds, occupying not half a cubic foot, but only a quarter.

Such a machine, to give the necessary effort, would need to revolve, not at 1,200, but at 5,000 revolutions per minute, and not to give 600 useful impulses, but about 5,000 useful impulses in the same period of time. This development is remote because of the imperative necessity for compression, with its attendant reciprocating parts.

Still, whether for good or evil, we are about to make a step in the direction of higher engine speeds, for it will not take us long to realize that under the newly-fixed limitation of cylinder capacity alone we can obtain more power if we use that cylinder more often in a given time. Personally, I look upon a limit to cylinder capacity alone as a temporary measure of a somewhat dangerous character. The alterations which are desirable for race winning under that standard are somewhat as follows:

- (1) Increased engine speed.
- (2) Multiple cylinders, possibly.
- (3) Water cooling, certainly.
- (4) Flywheels larger, certainly; heavier, probably; external, possibly, in spite of the fact that for touring purposes an external flywheel is notorious for throwing mud.
- (5) Larger valves, both inlet and exhaust, and larger exhaust tubes (inevitable if the engine speed goes up, to allow the gases to pass through unimpeded as the enormous velocity which will then be impressed on them).

(6) Mechanical inlet valves, for the valves will have to work fast, and as they will be relatively larger, their inertia is liable to be

increased, and therefore they require strong springs and a positive opening.

(7) *Pressure fuel feed*, for, as I have before suggested, if we wish to get gas rapidly through a given size of tube, we must push it in instead of merely sucking at it, and if we supply the gas under pressure, we shall be working the engine at a less ratio of expansion, so that we shall be driven to every sort of ruse to keep the cylinder cold.

(8) *Insulated exhaust*, by keeping our red-hot exhaust tube well insulated with asbestos from the exhaust port, we may secure that none of its heat shall be conducted back to the engine.

Fuel efficiency.—It would be a desirable improvement if an ingenious person would formulate a standard based on both fuel consumption and weight limit (if not for short races, at least for all competitions over 100 miles). We all admit that what we want is an efficient transmission and engine, and a light vehicle. We really do not care how big our cylinders are, provided the whole thing weighs less for the same power on the road wheels, and the best way to encourage the development of an efficient engine and transmission rather than a large engine and bad transmission is to call for a high fuel efficiency under a weight limit.

The best plan for turning the objectionable but popular cylinder capacity standard into the more desirable fuel consumption standard is by adopting the *capacity of cylinder per second*, and thus showing that this is the same as "fuel consumption per second." Here is a far better plan than our present limit, though Mr. Lyons Sampson, by what I think must have been an oversight, used it to defend the present capacity system. It is also for some reasons better than *cylinder capacity multiplied by the ratio of mean piston speed to linear road speed*, or *cylinder capacity multiplied by the ratio of engine revolutions to road wheel revolutions*, both of the latter combinations having been ingeniously and instantaneously devised, if I remember them rightly, by Mr. Napier and by Colonel Crompton respectively, when I criticized Mr. Crawley's very clever advocacy of the capacity limit. The volume of mixture swept out per second (or per hour) is a measure of the amount of fuel burned and Hospitalier showed that when that volume is 7 1-2 litres (of gasoline and air mixture) the horsepower is with ordinary engines approximately 1 hp. For long races it is far easier to measure the liquid fuel than the gaseous mixture, especially when we remember that the speed of the engine is not a definite quantity on which calculations can be fairly based.

For short races at full power it would be easier to calculate the amount of mixture

after the race had been won, provided the motorcycle had no two-speed gear. The only drawback that arises against a fuel consumption race is that though a competitor would appear to win he might find himself disqualified after the event, whereas the onlookers much prefer to see a race of which the visible winner really wins the prize, unless he commits some act of wickedness on the course.

Silencing.—On a long run an intense relief is felt when a steep down hill makes it necessary to cut off the ignition and the motor ceases to flutter. Those who have pedaled home with the belt over their handlebars will recollect how pleasant it was to hear the musical click of the free-wheel alone. Yet a few years ago motorists used to say they would not accept the gift of a perfectly silent motor. Even today this would be a safe threat, for I know of no philanthropic society which is compulsorily showering inaudible motor bicycles on a reluctant public. The effect of that sophistry remains, the demand for silence is absurdly little pressed home, though such a machine is almost as desirable as one which will cause no vibration to the rider at 30 miles per hour. It is also far easier of attainment. Think of the difficulty of asking one's way, of the unsociable character of a motorcycle tour, of the pleasant interchange of chat which the absence of pedal exertion would otherwise invite. Think of the lurking constable whom we warn, and the farmer who extendeth his hand on principle, but who only picketh up his whip if he gets warning before the cyclist is in sight! For silence we must aim at:—

- (1) A noiseless transmission such as a belt without the drawbacks.
- (2) An efficient transmission, because this helps to keep the engine small, and therefore the explosion small.
- (3) A noiseless valve and ignition gear.
- (4) A real exhaust silencer.

Silencing by interference.—Exhaust silencing without appreciable back pressure might be based on interference of sound waves—i. e., on the principle of two negatives making an affirmative. Indeed, it has been done in the case of a musical note—i. e., a sound consisting of a simple series of variations from a maximum to a minimum of pressure. Such a musical exhaust could be divided into two equal blasts, one of which passed through a long tube equal to half the wave length, while the other tube was very short; then by making the outlets face one another, a point of maximum air density would be confronted by a point of minimum density, so as to neutralize. Some slight advantage might be derived from this plan, although for complete silence you must first get your musical note without harmonics, and then prevent it varying with fluctuations of load, and I do not see any way to this just now.

Silencing by preventing the oscillation of the air.—You will have read that the

*From a paper read before the Automobile Club of Great Britain and Ireland.

German army is said to be testing a silent gun, and it has been surmized that this silence was secured by a flap valve, which closed over the mouth of the cannon within 1-100th of a second after the shot had been fired, thus preventing the inrush of air to fill the void, and thereby preventing air oscillation and resulting in silence. This is, I think, theoretically sound; also, a similar theory is the basis of the Oldsmobile and other silencers, which exhaust freely into a pot with small exit tubes. The pressure in the pot is raised quickly, but the small tubes let the air fizzle out slowly. The larger the pot the less the back-pressure, and the more continuous is the stream from the small holes—i.e., the less air vibration or sound.

Silencing by diminishing air velocity.—In the above methods it will be seen that the air velocity need not be diminished; in fact, it may even be increased—i.e., where small tubes are used. There is, however, a totally different plan. It is well-known that if the air channel has an ever-increasing diameter, the gas pushed through it will travel at an ever-decreasing velocity. If the sides of the conical opening so formed be free to vibrate, we get a trumpet which might give the musical note previously referred to.

I must leave this subject by pointing out that now that perfect exhaust silencers have been devised for motorcars, it is time cycles followed suit. I am sure that from the vendor's point of view silence is golden; from the purchaser's silence means consent.

(To be continued.)

AUTOMOBILE AFFAIRS IN ENGLAND.

W. H. Kitto, the automobile dealer who is a visitor from London to study the automobile trade in England is in excellent condition and it is more a question of obtaining cars than anything else. In conversation he said:

"Although there are a large number of French cars sold in England, the home people are turning out such good machines that I expect to see a decreased demand for imported cars this year. The machine most in favor is the light touring car of six or eight horsepower, carrying four people and selling at less than \$1,000.

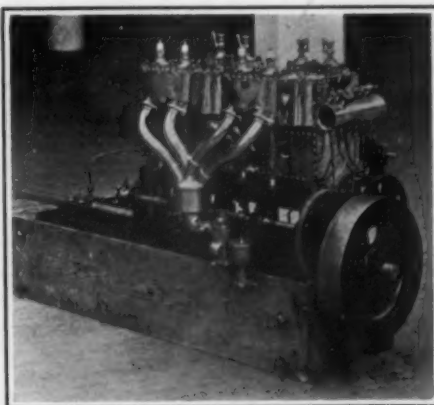
"On the other side we consider H. S. Rolls to be the best automobile driver in England, although Charles Jarrott and S. F. Edge are also in the first class.

"The Automobile Club of Great Britain and Ireland, which handles motor boat racing as well as automobile competition, has now 1,000 members, owns a handsome clubhouse and is preparing to erect a laboratory for the purpose of conducting experiments with various cars for the benefit of its members. The club promotes quarterly endurance runs as well as hill climbing contests and other events to prove the practicability of power-driven machines.

"The White steamer and the Oldsmobile are the best sellers among American cars handled in England."

Teakwood 20-HP. Launch.

The launch here illustrated was one of the late comers at the recent show at the Herald Square Exhibition Hall, where it still remains on view. It is the latest of several launches designed and built by the Yacht Gas Engine and Launch Company of Philadelphia. The length over all is 35 feet with a breadth of 4 feet 10 inches and a draft of about 10 inches. The general form of the boat is good, with an almost plumb stem and a square and slightly raking transom in every way superior in actual



DANTZEBECHER 20-HP. MARINE ENGINE.

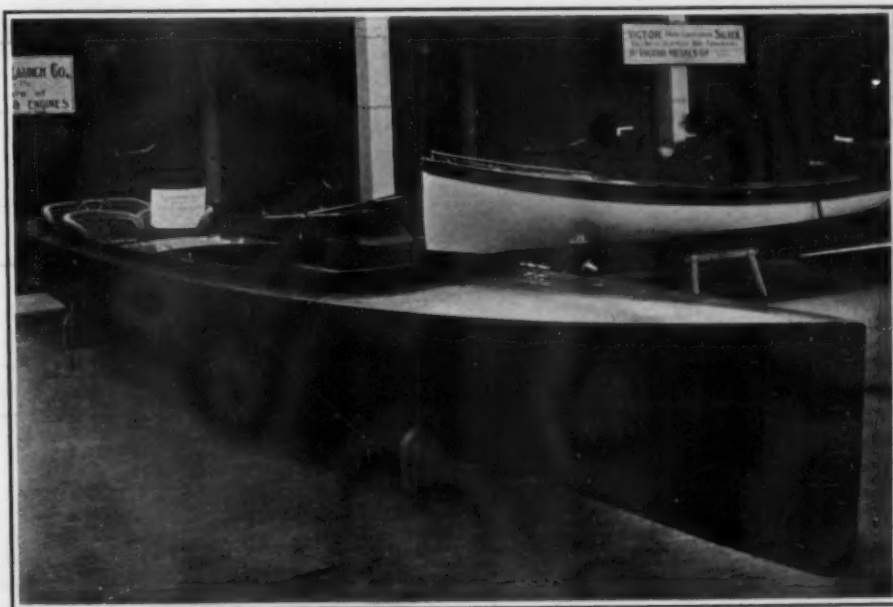
use to the freak torpedo stern now fashionable. The after body is well modeled, but the bow is excessively full both at and above the waterline, while the stem is very heavily built, a hackmatack knee of 3 inches siding and very blunt where it cuts the water. There is good freeboard and altogether the model is an able one for general use.

The planking is of teak throughout, 7-16 inch thick, with square seams caulked with a strip of copper. A thin strip of copper is bent into T form, the two sides

of the head of the T entering into saw kerfs run in the edge of each plank, while the leg of the T lies in the seam, pointing inward. Any swelling of the wood, however slight, compresses the copper and makes the joint watertight. The frames are of steamed oak, spaced about 6 inches on centers and quite heavy, and the hull throughout is strongly and solidly built. The decks are of teak, there being a long open cockpit divided by a short section of deck hinged to give passage fore and aft. The engine keelsons are of oak, heavy and massive.

No motor is installed, but the launch is intended for the company's new 20-horsepower engine. This motor, which, like the hull, was designed by H. E. Dantzebecher, vice president and general manager of the company, is of the four-cycle type, with all valves mechanically operated, the four cylinders being each 6 1-4 inches in diameter by 7 inches stroke. Twenty horsepower is claimed at 330 revolutions and thirty at 500 revolutions. The motor has several novel features in mechanical and structural details, and is specially designed to meet the present demand for a modern motor of marine type embodying the latest advance in gas engine practice.

It is understood that Oldfield has completed arrangements for his appearance in a series of races on the Crescent City race track at New Orleans, March 26 and 27. A number of fast cars will be entered to compete against the Winton Bullets. The negotiations were carried on by the New Orleans Automobile Company, and it is the intention of the promoters to put the track in condition for a successful attack on the circular track records. There is a possibility that Oldfield will meet John D. Ryan's driver in a ten-mile race for a large purse if the event can be arranged to take place at the time of the New Orleans dates.



TEAKWOOD LAUNCH BUILT BY YACHT GAS ENGINE & LAUNCH CO., OF PHILADELPHIA.

How to Tune Up a Racing Automobile.

Practical Suggestions for the Guidance of Entrants in Races Who Drive Medium or High Powered Cars.

By JOSEPH TRACY.

(Continued from page 276.)

EXAMINATION OF THE MOTOR.

We can next examine the motor. The bearings, both main and crank and piston pin, must be close fitting and run without knock. The valves, both exhaust and inlet, should be ground carefully with glass dust and finished to a high polish with fine tripoli or rotten-stone, and tested for leakage. The exhaust valves may be tested by taking off the exhaust pipe close to the cylinders, pouring a little kerosene on the valve heads, replacing the caps over the valve chambers, and turning the motor around slowly until the compression is felt. Now, while the motor is held against compression, apply the ear to the exhaust port of the cylinder which is under compression. If there is a leak it will be plainly heard blowing past the valve. If the inlet valves are mechanically operated they can be tested in the same way, by removing the induction pipes and listening at the inlet ports. In the case of automatic valves the valve and seat usually can be removed or tested by pouring a little gasoline in the hollow of the seat or "cage." If the gasoline leaks between the valve and seat they should be ground and tested again until tight.

Examine all the stems and see that they are not bent, warped, scored or badly worn, also that the mushroom of each is true with the stem. Exhaust springs should be sufficiently strong to close the valve promptly. Satisfy yourself that the temper of the upper coils which are in contact with hot metal has not been "drawn" and that the lower ends of the springs are securely in place. This applies also to springs on mechanically operated inlet valves. If the inlet valves are automatic, it will be necessary to find by experiment which spring gives the best results and also how much opening to allow. Both the strength of the spring and the amount of opening as determined by the manufacturer are usually correct.

TIGHTNESS OF VALVE CHAMBERS.

The next thing to do is to see that the caps or plugs closing the valve chambers fit properly in their places. On some motors these are made with ground joints, on others with gasket joints. If fitted with ground joints, they should be tested for leakage by pouring a little kerosene over the joints while the motor is running, and if not tight the kerosene will show the leak by bubbling. In that case the joints must be reground carefully, using glass dust for an abrasive material and finishing with rotten-stone and oil.

Pistons that leak can be detected by putting a small quantity of kerosene in each cylinder, on top of the piston; then by turning the motor around against compression and placing the ear to any opening in the crank case the sound of the air as it escapes past the leaking piston can be plainly heard. If the leak is a bad one the piston must come out and the rings be examined to see that none is broken, also see that all rings have enough elasticity to press outwardly against the cylinder walls all the way around.

LOOKING OVER THE IGNITION SYSTEM.

Now the ignition system can be gone over—beginning with the batteries. If accumulators are used they should be freshly charged; if dry cells or primary batteries see that they are new or at least equal to new. Examine all connections, binding posts and screws, and be sure that they are all up tight, also that all surfaces which are to make electrical contacts are well burnished with emery cloth before being put together. Follow the wires from the batteries to the switch and coils, and watch for breaks in the insulation and in the wire itself. See that the connections on the coil are tight, each one secured by a lock nut. Trace the ground wire, and find if it is well secured and makes good electrical contact at the point of ground, also look over the wires from the coil to the commutator or interrupter—on the latter all binding screws should be tight. Brushes must be clean (bright) and have sufficient tension to make good contact at all speeds. If the interrupter is of the De Dion, or blade and screw type, the platinum tips can be filed smooth and true with each other with a very fine file. This type requires great care in setting, for if all the blades are not at equal distances from the screws the blade which is nearest the contact screw will fire its cylinder earlier than those which are further away. This is true only when trembler coils are used.

If coils without tremblers are used the opposite is true, viz: the blade which is nearest the contact screw fires its cylinder *later* than those which are further away, as the time of producing the spark depends on the instant of *breaking* contact, not of making it, as in the other case.

SETTING THE TREMBLERS.

We shall now proceed to set the tremblers. The motor is turned until No. 1 brush touches the brass segment on the commutator. The ignition plugs should be removed from the cylinders, connected with their respective wires, and laid on the

motor in such position as to show the spark between the points when the tremblers are in action. Brush No. 1 will now complete the circuit and cause trembler No. 1 to vibrate—if we close the switch—No. 1 plug now should be sparking. If the note emitted by the trembler is low it usually means slow vibration. To increase the speed of vibration and also the strength of the spark, turn the adjusting screw—right-hand direction—so as to bring it closer to the trembler—if turned too far it will jam the trembler. The proper position is when the spark at the plug is strongest, and when this is attained the screw is secured with the lock nut. Move the motor until No. 2 touches the segment on the commutator disk and proceed as before; likewise for the other cylinders. When all tremblers are tuned properly, the plugs may be examined for cracked porcelains. Cracks may be detected by a peculiar crunching sound, if it is attempted to twist the porcelain in the metal shell. The wires from the plugs to the coil should be carefully kept clear of all metal parts and allowed to touch only shellacked wood, and they should be well secured to the binding posts on the coil.

MAKE AND BREAK IGNITION SYSTEM.

On cars having make and break or "low tension" ignition, the magneto must be examined, cleaned and oiled. As one side of this system is grounded, we have to deal with only one wire, which leads from the magnet to a bus bar on the motor and from which branches lead to each cylinder. See that the rubbing contact surfaces on the magneto shaft are clean and bright and held firmly together. When the motor misses, the trouble often originates at this point. If on pressing these contacts against each other with the fingers the motor fires regularly, it is plain that either the spring is weak or the contact surfaces dirty. Note that the wires or strips which connect the igniter plugs with the bus bar make good metallic contact on both the bar and the plug.

The entire sparking mechanism, both stationary and moving electrodes, should now be taken out of each cylinder and the electrical contacts which produce the spark cleaned and brightened with emery cloth. The insulation surrounding the stationary electrodes will require cleansing with gasoline and a brush, and looking over for cracks or other imperfections. The taper joints on the moving electrode should be well ground in in order to avoid loss of compression by leakage. The joints between the igniter attachment and the cylinder will need to be made absolutely gastight either by grinding, scraping, or by the use of gaskets, and should be tested with kerosene in the same way as the valve chamber caps previously referred to. Examine well the little springs on the different parts of the ignition gear; see that each is of the proper tension, and properly adjusted and held securely in place.

SETTING THE IGNITERS.

Having replaced the igniters they should now be set so that each cylinder will fire at the same point of the stroke. To do this we must have a length of straight stiff wire, small enough in diameter to pass through the compression taps or other openings on top of the cylinder heads. Now insert the wire through the hole in the compression tap and let it drop into the cylinder until it rests on the piston. Be careful that the lower end of the wire does not drop into the lathe center hole in the top of the piston. When the piston is at the lowest point the end of the wire should project 3 or 4 inches above the compression tap. The taps, of course, must be of equal heights, which can be ascertained by laying a straightedge along their tops.

Assume that we are working on No. 1 cylinder. Turn the motor around until No. 1 piston comes up on the compression stroke, which will be the *first* time the piston ascends after the inlet valve (mechanical) closes. When the piston reaches the highest point in the stroke the wire should be notched on a level with the top of the compression tap. Now mark the wire 1-4 inch above the notch and then rotate the engine *backward* until this mark is just level with the top of the compression tap. If this is done correctly the piston will be within 1-4 inch of the end of its compression stroke. The igniter can now be set on No. 1 cylinder, so that the electrodes are just *breaking* contact; which means that No. 1 cylinder is firing 1-4 inch ahead of the center.

Care must be taken to see that when the spark control handle is *retarded* as much as possible the rods between the handle and the igniter are so adjusted that the cylinder fires *after* the piston has passed the center to avoid back "kicks" in starting. The reason why we set the igniter 1-4 inch before the end of the compression stroke and not on the center is because it is practically impossible to tell when the piston is *exactly* on center without seeing the crank pin or connecting rod. The same operation must be gone through for each of the other cylinders.

SETTING JUMP SPARK IGNITION.

In setting jump spark ignition, after getting the piston in the position as described for the hammer spark, the fiber disc must be rotated on its shaft until contact is made between the brass segment on its periphery and the brush connected with the cylinder that is being regulated. Or, if the interrupter is of the blade and screw type, the cam which operates the blades will have to be turned on its shaft. In setting the ignition of this type if there is no trembler on the coils, we must remember that the spark does not jump until contact has been broken; also that only a single spark passes and not a stream, as is the case when the trembler coil is used. The same precautions about retarding the spark should be taken as in the case of the make and break system.

Connection between the spark control handle and the igniter or interrupter mechanism must be positive and free from lost motion so that when the handle is moved, even slightly back or ahead, the time of ignition will be changed proportionately. Also see that the spark control handle will remain fast in whatever position it is placed, and will not be jarred out by the vibration of the motor or by road shocks. The same remarks apply to the throttle or other handles on the car. No one defect is so frequently found on cars as lost motion in the control mechanism.

OIL TANKS AND LUBRICATION.

Oil tanks can now be taken apart and washed thoroughly with gasoline and all the strainers cleaned. Oil pumps in like manner. In exhaust or water pressure systems the pressure pipes must be taken off and washed out, and the strainers or filters on exhaust chambers cleaned, also the pressure valve. Oil and grease pipes must be taken off and flushed out with gasoline, taking care that no grit gets on the bearings when the feed pipes are off. Any thick, gummy deposits in the system can be removed by using a solution of caustic potash, and afterward see that all pipes and connections are thoroughly cleansed. Glass sight feed tubes should be cleaned inside and the regulating screws and nozzles examined to see that all function properly. The crankcase can now be emptied out and washed thoroughly with kerosene, which may be left in the case for two or three minutes while the motor is run slowly, and then drained off. The proper amount of best cylinder oil is now put in and the motor is ready to start, with the car standing.

The oil feeds to the various bearings can be regulated when the engine is running. Oil of suitable viscosity should be used, not too heavy to clog the drip nozzle nor too light to carbonize or smoke badly.

STARTING THE ENGINE.

While the car is standing we can now start the motor and when it is turning over each cylinder must be run alone; that is, with the ignition cut off on the others. Open the throttle wide, advance the spark and note the action of each cylinder in turn. If one should miss, the cause of the missing must be found and remedied, and the same applies when one cylinder runs slower than the others. It may be that the ignition is later or earlier than on the others, or that the springs on the exhaust or inlet valve are weak, or that there are leaks in the valves or pistons. Frequently valves open too soon or too late, due to the "push" (valve) rods being too long or too short. Other frequent causes of variations in speed between cylinders are leaky ignition plugs, leaking cylinder head joints or igniter joints, leaky compression taps, induction pipe drawing air through bad joint or flange. A good plan is to find the cylinder which runs best and tune the others until they run equally good.

TRIAL RUN NOW POSSIBLE.

The car may now be taken on a trial run, to test the clutch, steering gear, oiling system and gear change mechanism. To find the proper amount of oil to feed to the crankcase measure the quantity put in. This should be sufficient to allow the nuts on the connecting rod ends to dip in about half an inch. The drip feed to the base chamber should now be set at, say, five drops a minute. After a twenty-mile run find whether the oil level in the case has risen or fallen. If it has risen, five drops a minute are too much; if it has fallen, five drops are too little. After a few trials of this kind we can determine exactly the proper rate of feed.

QUESTION OF AIR RESISTANCE.

Little need be said on the question of air resistance, other than its retarding effect at high speeds should be kept in mind in stripping the car. The driver should wear close fitting clothing and should sit as low as is consistent with easy operation. In short races often it is well to start alone, as carrying another person alongside the driver may make the mile 2 or 3 seconds slower than if only one person is in the car.

When everything is working well the car is ready for the race or trial.

(Concluded.)

FAST NEW AUTO BOAT.

Twenty-Mile Craft of 65 HP. Building for Captain Phelps.

Special Correspondence.

NEW HAVEN, March 7.—A fast auto boat that will be entered this season in all the important power boat events for which she will be eligible is being built for Capt. John J. Phelps, the well-known yachtsman, by Wychoff Bros., of Clinton, Conn. She will hail from the Sachem's Head Yacht Club, of which her owner is fleet captain. She will be of the torpedo boat type, after designs by Chas. B. Wyckoff. Her dimensions are, length over all, 43 feet; at waterline, 41 feet; beam at deck, 6 feet; at waterline, 4 feet 10 inches; draft of hull, 6 inches.

She will be built more substantially than craft of her class usually are, in order that she may be durable and capable of being used when desired for pleasure purposes. Her cockpit will accommodate twelve guests, and there is ample room in the forward section for the crew to manage the machinery.

The planking will be of Honduras mahogany. The boat will be equipped with a six-cylinder Hasbrouck engine of the latest type, with skeleton frames, and the builders have guaranteed a sustained speed of twenty miles an hour. The engine is neither a heavy marine affair nor a light automobile machine, but strong and efficient. It will weigh complete 1,200 pounds and will develop 65 horsepower at 600 revolutions of the screw per minute.

It is calculated that the whole outfit will weigh 2,300 pounds.

Correspondence

Racing Car Classification.

Editor THE AUTOMOBILE:

Sir:—To classify racing automobiles just as horses are classified, would, I believe, improve competition in racing, and I venture a hope that a trial of this plan will be made during the coming season. That it would furnish closer and more interesting contests, which were so conspicuously absent at meets of the past, is certain. Such a plan for classifying automobiles would call for a car being considered a "green" car until it had an official trial. This is followed in the trotting horse field and seems to work well. Records on the track and on the road could be classified separately.

After a machine was marked it would be eligible only in its class. For example, if a machine raced in 59 1-4 or won a ten-mile race at that average speed, it would be considered in the one minute class. If its mile was in 55 1-4 it would be in the 56 seconds' class, and so on. The fraction of second would permit the car to enter in the class ahead as followed in trotting.

The marks against a car would be obtained only when it won a race under the American Automobile Association's sanction; unofficial trials not to count, nor would any mark be placed against a car until it had won a race or a heat.

Promoters could then open classes for certain styles of machines and be assured of a fair entry list, while the contestants would know they would not be compelled to race against high-powered cars or cars of so much greater speed that they wouldn't have a chance of winning. If a promoter carded a race known as the "54 second class," all machines would be eligible that had records slower than 53 1-4 seconds. No car that had won a race in faster time than 53 1-4 seconds would be permitted to start. Of course machines that had covered miles in 58 seconds, one minute or anything slower than that would be eligible and so would a "green" machine which had not publicly won a prize. The "green" machine might be much faster than any car in the race in question, but it could only win one such race before it was in its proper class.

Under the plan roughly outlined above, cars of equal speed would then come together in a proper class and victory would rest to a greater degree than at present on the chauffeur's skill and the perfect running of the engine. At race meets of the past, winners have generally won by so large a margin as to extract all interest from the race, so far as competition was concerned. As a matter of fact, they have been nothing more or less than trials against time.

As there is an increasing interest in automobile racing on the part of manufac-

turers, operators and the general public, and as proper competition furnishes excellent publicity, I hope that some plan of classification will be adopted by the A. A. A. that will render less certain the result of the contests. Great speed, skill and nerve are required, all of which cannot fail to make racing interest, provided a method is adopted that shall give each entrant a fair chance of winning first prize. L. A. New York.

As this subject is high in importance, comment on the foregoing letter will be found in the editorial page.—Ed.

Horses and Horsepower.

Editor THE AUTOMOBILE:

Sir:—Will you kindly put something in your good and interesting magazine that will give information on the question below? I am asked and can say nothing:

For certain technical purposes this misnomer—horsepower—gives the common people little useful information. The ordinary run of would-be purchasers cannot understand this horsepower question, for to them it does not seem to be horsepower at all. Now take a small runabout with an engine of so-called 4 horsepower, where does the horsepower show up? For instance, a party said to me: He would take a wagon weighing 1,000 pounds with a load of 1,000 pounds and put his four horses to it and go up a grade in deep mud or sand. His four horses would walk off with the outfit as if there was nothing to pull. Take the auto runabout with the same load and weight and it wouldn't budge on the same road, and it would be a job for a so-called 10-horsepower car to go along as easy as his four horses did. Really, this kind of rating gives no idea of power. A heavy wagon with two tons of coal weighing 6,000 pounds in all would be put up this grade with six horses—where would a 6-horsepower auto come in on such work?

My friend asks is there not some way of rating the power of the cars that will give the actual work they will do.

Can you enlighten us ignorant people? Scranton, Pa. G. P. D.

Among the questions asked us continually, this one of comparison between the "hay motor" and the mechanical term "horsepower" is probably the most frequent.

For the purpose of the ordinary automobilist there is no relation whatever between the power of a horse and one horsepower.

The reasons are too lengthy to go into here in detail, and it will be possible to touch on a few points only.

We find that many persons have no clear conception of what a horsepower really is, or what "power" technically means, for that matter.

Power means a certain amount of work performed in a certain time. An engine

of one horsepower rating has or should have the capacity of performing 33,000 foot pounds of work in one minute. This has no reference whatever to the kind of work performed, whether done in overcoming internal friction or in rotating the wheels of a car at high speed in loose sand, or in driving a car along a good road.

On the other hand, few persons will agree on what the power of a horse is. The amount of work that a polo pony can do in a given time is manifestly not the same as a Percheron thoroughbred, and there are a multitude of horse types in between.

Now, in the case of automobiling, a motor rated at a certain horsepower, of several units for instance, will be required to drive a car which one "live horse" could pull easily. The horse acts directly on the ground while in the car a good deal of power is wasted in transmission. Then the motor is expected to carry a certain load a certain distance in a much shorter space of time than the horse. It is well to remember too that the friction losses increase with the speed and the air resistance about in proportion to the cube of the speed. Also, it is a well-known fact that a horse, like a man, can expend an immense amount of stored-up energy, far above its normal, for comparatively brief periods. More than one athlete has covered the hundred yards flat in less than ten seconds, but we never heard of a man running a mile at the same rate of speed.

In automobiling it is well to leave the obsolete horse out of the question and make mental use of the term horsepower as a means of comparison between one car and another and not between a machine and an animal. It would be just as profitable for purposes of sale or exchange to compare a fish and a turnip.—Ed.

Whipple's Binghamton Garage.

Participants in the N. A. A. M. endurance run of last October, who remember the roofless new garage in Binghamton, N. Y., which was used as an official garage and control the second night, will be as much interested in the accompanying views of the recently completed establishment as will be the local motorists and tourists who will have occasion to stop in Binghamton this summer. The establishment stands on Washington Street, and is one of the largest and most complete of its kind in the United States. It was erected for R. W. Whipple, proprietor of the Binghamton Automobile Co., distributing agent for eight New York counties for the Olds, Winton, Locomobile, Pierce and Waverley automobiles.

The building has the advantage of a very central location, and extends through the block to Water Street. It stands four stories high on Washington Street and five on Water, and has entrances on both. It has a frontage of 60 feet and is 106 feet deep, affording 33,000 square feet of floor

space. About 6,860 square feet of glass entered into the construction, every provision having been made to provide ample light.

The Washington Street front is of pressed brick trimmed with Indiana limestone, with big plate-glass windows in first and second stories extending from floor to

made of hard wood, sawed quartering and laid diagonal. The show room is ornamented with an elaborate design of steel ceiling and partitioned with glass. Large plate-glass doors form the street entrance to this show room, and to the right of this entrance are reading and lounging rooms with all the automobile papers and bulle-

is the garage entrance. The entire rear of this floor is used for storage purposes, and has a locker for each individual owner. A large wash rack is on this floor within easy access to a powerful Otis elevator, 16 by 8 feet, running from the basement to the top floor.

Gasoline, oil in cabinets, carbide, etc., are handled in a separate steel building connected by passage direct from the wash rack, and the gasoline, which is buried in the ground in ten-barrel tanks, is pumped by Bowser self-measuring tanks directly into the vehicle tanks. All electric wiring is in conduit, not a wire being in sight.

The second floor front is an auxiliary show room and in the rear is a finely equipped repair shop, excellently lighted. It is equipped with pits fitted with trap doors in the floor, overhead traveling cranes, two separate power plants, screw-cutting lathes, high-speed drill presses, emery grinders, buffers, water-jacketed air compressors, brazing plants, blacksmith forges and anvils, jigs and templates, power hack saws, and in fact everything desirable in machine and bench tools for working metal and wood. This floor has, as well, one of the most thoroughly equipped stock rooms in the country, and contains a vast variety of automobile parts and fittings from the smallest machine bolt to the largest tire. On this floor is also a complete line of naphtha launches, for which Mr. Whipple is agent.

The third floor is occupied by the City Club, whose quarters rival the best in central and southern New York. A spacious dance hall, promenade, reception lobby, parlors in white enamel, billiard parlors, card rooms and a complete culinary department are some of its attractions.

The fourth floor is entirely filled with second-hand vehicles, the handling and disposing of which is quite an item with this house.

Binghamton, with its 45,000 population, has 130 automobiles and can easily support a fine garage such as this, and Mr. Whipple's enterprise in providing such facilities shows an intention to keep ahead of his customers' requirements.



WASHINGTON STREET PLATE GLASS FRONT OF NEW BINGHAMTON GARAGE.

ceiling. The basement floor opens directly from Water Street and is concreted and drained, forming one large washing stand. The main, or first, floor has its entrance on Washington Street, thus giving two floors street entrance. All carriage floors are

tins on file. The general and private offices are located still farther to the right and partitioned off with a line of show cases, filled with everything for automobilists' needs from a spark plug to a full display of clothing. At the extreme right



CORNER OF SHOW ROOM AND OFFICE ON SECOND FLOOR.



STORAGE ROOM LOOKING TOWARD SALESROOM.



VOL. X.

No. 10

Published every Saturday by

THE CLASS JOURNAL CO.,

Flatiron Building, Madison Square,
NEW YORK CITY.Cable Address - - - Autoland, New York
Long Distance Telephone - 300 Gramercy, New York

SUBSCRIPTION RATES:

United States, Canada and Mexico, - One Year, \$2.00
Other Countries in Postal Union, - One Year, \$3.00To Subscribers—Do not send money by ordinary mail.
Remit by Draft, Post-Office or Express Money Order,
or Register your letter.

FOREIGN SUBSCRIPTION AGENTS:

ENGLAND:—Hiffe & Sons, Limited, 3 St. Bride Street,
Ludgate Circus, London, E. C.FRANCE:—Boyveau & Chevillet, 22 Rue de la Banque,
Paris.

GERMANY:—A. Seydel, Mohrenstrasse 9, Berlin.

To Advertisers—Copy or changes in orders for advertisements should reach us not later than 5 o'clock p. m. Monday for the issue of Saturday following.

Copyright, 1904, by The Class Journal Company.
Entered at New York, N. Y., as second-class matter.

The Automobile is a consolidation of The Automobile (monthly) and the Motor Review (weekly).

Copies Printed This Issue, - - 12,500

" " Since January 1, - 132,800

**New York
State
Laws.**

Amended laws covering the use of automobiles, which are now under consideration by the legislature in New York, when passed will favorably affect the use of automobiles in this State and will have undoubtedly a widespread effect in influencing rational automobile legislation in other States throughout the Union. As our readers are doubtless aware, there are two bills now before the legislature in Albany. One of these has been introduced by Senator H. W. Hill, and has had the support of the New York Automobile Association. This bill has been amended several times and it is likely that in its present form, it will pass the Senate and go to the Assembly for consideration. The other bill, known as the Cocks law, has reached a third reading in the Assembly, and has been referred to the Committee on Internal Affairs.

There is no doubt whatever that the considerate use of automobiles by owners in this State has done much to bring about an amendment of the really objectionable Bailey law, which is now in force. In the Hill bill, for example, the limitation of speed reads as follows: "No person shall operate a motor vehicle on a public highway at a rate of speed that is greater than is reasonable and proper, having regard to the traffic and use of the highway, or so as to endanger the life or limb of any person." Following this are certain regulations controlling the speed of vehicles in built-up sections.

This shows that common sense and reasonableness have influenced the promoters of the Hill law. Automobilists have never been unreasonable in their demands and have only asked for fair treatment. The question of speed has been discussed by them in the light of a practical acquaintance with the automobile, while much of the opposition has been from persons whose knowledge of the machine was limited and whose inexperience saw in the automobile a dangerous vehicle for road use.

Familiarity with the automobile, however, has shown that it is more surely under control than any horse-drawn conveyance and that speeds which would be dangerous in the case of the latter are quite within the limits of safe and considerate use of the highway by automobilists.

**Local
Automobile
Shows.**

The season of the local automobile show is just now at its height, and reports from those that have been held and those that are in progress state that they far surpass in representative character, in attendance, in the popular interest shown, and in actual sales made, all previous shows in the respective leading cities, while advance news of the Boston and Washington shows are equally enthusiastic and optimistic. Severe and disagreeable as the weather has been, it has not deterred the public from visiting the exhibitions in unprecedented numbers; in fact, it may be assumed that the long, cold winter has had the effect of developing unusual impatience to get out on the road with a motor car, and if the spring opens early and is fairly pleasant, there will be an astonishing turning out of motorists.

The function of the local show is to stimulate this spirit locally and to bring the intending purchaser into close relation with the retailer. It should be a representative exhibition of all the cars and parts and furnishings that are handled in the home city, giving the resident motorist an accurate knowledge of all that the local trade supplies. It was to this end in part, that the National Association of Automobile Manufacturers decided to support only two national shows and that its members should make displays at all other than the New York and Chicago shows only through their retail departments, their branch houses or their local agents. This restriction gives the local representative the opportunity of cultivating personal acquaintance with his actual or possible customers which makes for so much good in future relations, while it also, by reducing if not fully eliminating the exploitation of cars that have no permanent representation in the city, decreases the probability of customers purchasing such machines only to be dissatisfied later when they discover that breakage of any part necessitates the ordering of duplicate parts from an out-of-town factory and their replacement

in the car in a local shop by workmen unfamiliar with that particular make. Such a contingency frequently means long delay and perhaps a poor job, to the disgust of the owner, the discredit of the car and the condemnation of the local shop.

**Auto Boat
Racing
Control.**

In the interests of sport and the development of auto boating it is to be hoped that some amicable settlement of the differences existing between the American Automobile Association and the American Power-Boat Association as to the control of racing may be reached. It will not be an easy matter, perhaps, to adjust the differences if the representatives of each organization persist in viewing the question from their own side only. The Power-Boat Association undoubtedly can make the claim of priority in a sportsman-like effort to promote scientific contests between owners of motor boats. As against this, however, the A. A. A. can set off the development of the motor boat in an entirely new direction which has been fostered and aided by the automobile interests rather than by the old line motor boat manufacturers.

Those whose interest lies chiefly in the fast boat, with fine form and the motor of high horsepower in proportion to the weight, are naturally desirous of securing the adoption of rules that will classify the various boats so that the spectacle of the last boat in, winning a race on time allowance, may be avoided. On the other side, the marine interests do not wish to see everything sacrificed to speed, and the restraining influence that they can exert if wisely applied will really greatly benefit the new sport and do much to discourage the undesirable "freak" boat.

Automobilists have become so accustomed to see the leader win the race that the application of time allowances does not readily appeal to them. The power boat interests will need also to remember that the spectacular cuts a considerable figure in racing among landmen, and for that reason races confined to boats of generally similar type are bound to be popular.

There is nothing worth while to be gained by any division of authority and interest, and true sportsmanship dictates a friendly settlement.

**Proposed
Racing
Classification.**

A correspondent who is seriously interested in the sport of racing automobiles has written us a letter, which is printed on another page, in which he suggests that the method adopted in classifying trotting horses be applied to automobiles. This same suggestion has been made by others who are equally well intentioned, and it is of sufficiently general interest to demand particular attention. The method proposed is apparently an attractive one at first glance. It will not, however, survive any critical examination. If it were

adopted there would be no way, for example, to prevent the entry of a 90-horsepower racing car in a race intended for runabouts, providing the big car was a "green" one, as our correspondent terms it; or, in other words, providing the big car had never before been entered in a race and received a speed rating.

There is no similarity between automobiles and horses in racing. A horse is an "individual" and as such there is no possible or practical way of scientifically estimating its capability for speed except by actual trial. In trotting, a "green" horse, that is, one that has never been entered in a race and received a "mark," can be entered by its owner in any class, but all the entries must be made before the horse is marked. Subsequent to that the horse cannot be entered in any event out of its class.

An automobile may be one of a lot the performance of which is susceptible of mathematical treatment even before it is constructed. A race properly carried out should be a test of the capability of the manufacturer rather than of the machine, assuming that competent driving is secured in all cases. In this way only can racing be of real benefit to the automobile purchasing public.

Under the plan suggested a highly inefficient machine would be classed after its first race and then be able, possibly, to win races away from well-designed machines that in their legitimate class made excellent performances. For example, a poorly designed machine of 90 horsepower might be unable to do much better than a well designed car of 40 horsepower. Placed in the 40-horsepower class, it might win every race in which it was entered.

Any empirical method of classification will fall short of the desired result—the betterment of the regular type of American automobile.

FREIGHT RATE INVESTIGATION.

Special Committee of the N. A. A. M. is at Work—Other Association News.

Members of the National Association of Automobile Manufacturers have become thoroughly aroused on the question of excessive freight rates and it is more than likely the views of the organization will be presented to representatives of the Trunk Line Association at an early conference.

The committee of the N. A. A. M., consisting of J. Wesley Allison, R. D. Chapin and W. R. Innis, is now gathering material concerning the operation of the new rates to be presented at the conference.

The excuse offered by Chairman C. E. Gill of the Trunk Line Association for the enormous increase in rates that excessive claims for damages were made by shippers does not seem to be borne out by the facts.

"It was reported at our meeting," said Manager S. A. Miles of the N. A. A. M. to The Automobile representative, just before his departure for St. Louis, "that of thirty-seven makers shipping machines

only twelve have made any claims against the railroads. The Oldsmobile people, among the largest shippers in the country, have not made a single claim and the Winton company, which is another big shipper, has made claims amounting to only one-tenth of 1 per cent. of the freight charges paid."

The work of the committee appointed to consider the question of show dates will likely be confined to arrangements for the 1906 show. The dates of the next, 1905, shows are fixed by contract according to Mr. Miles and cannot be changed.

Referring to his journey to St. Louis, Mr. Miles said that the space at the St. Louis Exhibition will be entirely free to exhibitors, except for the cost of putting the section in shape for exhibition purposes. To provide for that charge, \$5,000 has been appropriated by the N. A. A. M., which will purchase desks, chairs and rugs to furnish the stands in the section. The association will thus prepare the section for occupancy, so that all that the exhibitors will have to do will be to place their machines in position.

ROUTES FOR WORLD'S FAIR RUN.

Augustus Post, chairman of the touring committee of the American Automobile Association, is arranging to accommodate 1,000 automobiles in the big run to the St. Louis World's Fair in August. He believes this number will be parked in the grounds when the caravan reaches the Mound City in August.

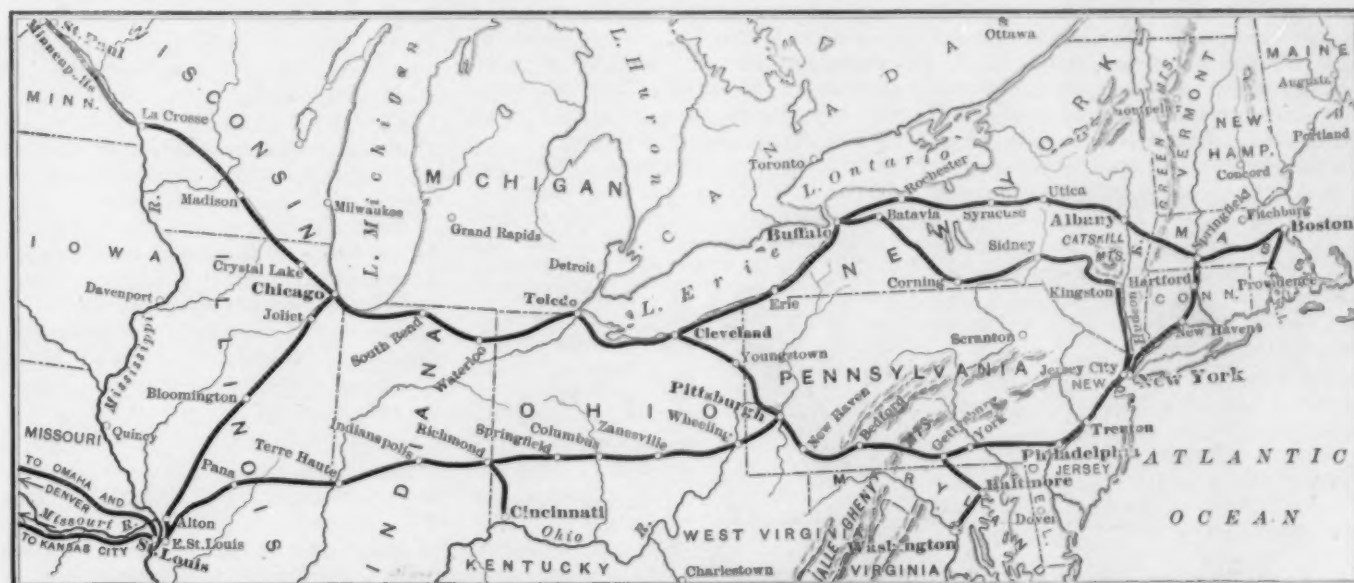
New Yorkers will leave July 26, following the towns noted on the accompanying map. The Boston section will leave July 25 and meet the New York delegation at Buffalo. The section from Buffalo will leave July 26 and a Columbus, O., division starts on August 4. There will also be runs from Minneapolis, St. Paul, Denver, Omaha and Kansas City.

AMENDED AUTO LEGISLATION.

Hill or Cocks Bills Likely to Pass in New York State with Amendments.

"It looks as though we were making big gains toward reasonable legislation in this State," said President Scarritt, at the Automobile Club of America, on Tuesday night, referring to the Hill bill and the Cocks bill, now pending in the legislature at Albany, and either of which may become a law within a few days.

"Various conferences have resulted in certain modifications that make the proposed legislation fair and just," continued Mr. Scarritt. "The measures include the following salient points:



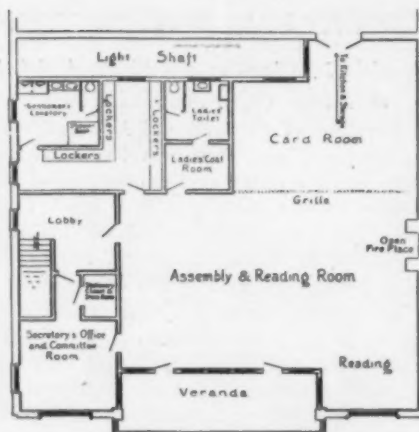
MAP OF SELECTED ROUTES FROM VARIOUS CITIES TO ST. LOUIS EXPOSITION FOR BIG RUN NEXT JULY AND AUGUST.

BUFFALO CLUB QUARTERS.

Comfortable Rooms with Garage Connection
to be Ready May 1.

Special Correspondence

BUFFALO, Feb. 27.—The special committee of the Automobile Club of Buffalo appointed to secure club quarters has prepared a plan of the new rooms which have been secured at 59 Franklin Street, and copies of this plan are being circulated among the members together with a letter from Secretary Fred J. Wagner, stating that the rooms will be ready for occupancy about May 1, when they will be opened by a club smoker. The board of governors intends to devote a large portion of the club's share of the profits of the present Buffalo Automobile Show to fitting up and furnishing these rooms in a comfortable and attractive style, and in order to swell the profits and increase the fund for this purpose the members were strongly



PLAN OF BUFFALO CLUB ROOMS.

urged to visit the show and induce their friends to do the same.

The accompanying diagram shows the plan of the rooms, which will be connected at the rear with a garage in the same building which will have ample repair and storage facilities.

Amended Auto Legislation.

(Continued from page 309.)

"Instead of a fine not to exceed \$50, with a minimum of \$25 for the first offense in excessive speeding, the fine can be anything up to \$50, even as little as \$5.

"The speed limit is raised from 8 to 10 miles an hour in the built-up portions; is settled at 15 miles for the outlying districts and 20 miles in the country. Built-up portions are specified as places where houses near the roadway are not more than 100 feet apart. Signs heretofore placed almost anywhere outside a village, but supposed to be within half-a-mile of the postoffice, will be required to be within the half-mile, and within one-quarter of a mile if in an unimproved part of the country. The new law requires that signs be put up to warn motorists when they are coming to a village where speed must be reduced.

"The absurd provision in the Bailey law, requiring slow-down or stop in passing all domestic animals is removed and in future operators will only be required to slow down in passing horses. When the horse is restive, the operator is required to wait a reasonable time before going by. The same applies when an automobilist is going in the opposite direction.

"Chauffeurs will be licensed and must wear a numbered badge.

"Penalties for minor offenses are reduced; such as lights being out or traveling without a number.

"Credit for framing the measures must be given to the New York State Automobile Association, of which our club is a member, and particularly to Judge Hotchkiss, its president."

A QUARTERLY dividend of 2 per cent. has been declared on the preferred stock of the Electric Boat Company.

DRIVING FEVER RISING.

Seventy-Five Syracuse Club Members
Impatient for Summer Activity.

Special Correspondence.

SYRACUSE, March 7.—The fever in which the members of the Automobile Club of Syracuse await the opening of the motoring season is fairly melting the snow and hurrying the departure of winter hereabouts. Many new cars have been ordered and the enthusiasm with which the club anticipates the work and pleasure of the season is boundless.

During the winter months the members have been holding regular and frequent meetings to lay plans for the summer and to talk over matters with reference to roads or speed regulations in the city and in Onondaga County. A series of smokers has also been given at which motorcyclists, members of the Driving Club of Syracuse and city officials have been entertained. At a business meeting preceding the last smoker the club admitted sixteen new members, including many of the city's prominent citizens not previously enrolled. The new members, who increase the total number to seventy-five, are Burns Lyman Smith, W. S. Peck, Jr., Hendrick S. Holden, Fred R. Peck, John F. Huber, Ross L. Andrews, Frank A. Barton, Giles H. Stilwell, A. G. Bolster, G. E. DeLong, Frank M. Kinney, Spencer C. Crane, William H. Bissell, Albert E. Petrie, E. H. Dann, all of this city, and Theodore Coles of Oneida.

President Willet L. Brown, who with Secretary Frederick H. Elliott, Giles H. Stilwell, Hurlburt W. Smith and others, went to Albany and appeared at the hearing on the Hill-Hotchkiss-Cocks automobile measure, told the club his experience. He said that in his opinion the measure is almost certain to become a law. C. Arthur

Benjamin spoke on his observations at the automobile shows in the different cities which he visited.

Reports of the officers showed that the club is in an unusually prosperous condition and has a handsome bank balance to its credit. Secretary Elliott was elected a director of the New York State Automobile Association, with H. W. Smith as alternate.

Among the local club members who are in attendance at the Buffalo Automobile show this week are H. W. Smith, George S. Larrabee, Carl L. Amos, Frederick H. Elliott, H. W. Chapin, J. A. Seitz, R. M. Cornwall, C. Arthur Benjamin, John Wilkinson, Harry C. Pierce, and John Maxwell of Oneida.

N. Y. S. A. A. DIRECTORS MEET MARCH 19.

The first annual meeting of the board of directors of the New York State Automobile Association will be held at the Yates Hotel here Saturday, March 19, and the entire board of eleven members is expected to be present. At that time the question of establishing a State headquarters in this city during the summer months from May until November will be brought up and there is a strong probability that the plan will be adopted. The action is advocated because of the city's central location and because a large amount of business will of necessity devolve upon the office of Secretary-Treasurer Elliott.

A. CLEMENT TO WITHDRAW.

Special Correspondence.

HARTFORD, Conn., Mar. 7.—A. Clement, the French automobile and motor manufacturer, has decided to shut down his factory here and return to France, and there is a possibility that if a transfer can be made upon a reasonable basis, some of the factory machinery will be purchased by Wilkinson & Anderson of New London, who recently began the manufacture of gasoline motors. The business of A. Clement was started at Hartford two years ago with good prospects. Although the help has been released, the factory remains open, Edward L. Smith, an attorney, and M. Ernest Roguet, a nephew of M. Clement, being in charge. Mr. Smith is liquidating the affairs of the concern.

Attorney Smith gives as the reason for M. Clement's withdrawal from the manufacture of small motors attachable to any bicycle, that he is so very busy with his big factory near London and his two factories in France that he has no time in which personally to look after his interests in this country.

A report was circulated in the automobile district this week that a two-mile race track would probably be built at Bretton Woods, a summer resort in the White Mountains, New Hampshire. Messrs. Anderson & Price of the Ormond Hotel in Florida were named as the promoters and W. J. Morgan as the probable manager, should the track be constructed.



The prices of the Crestmobiles were changed on March 1 as follows: Runabout, \$800; tonneau, \$900.

P. A. Williams, Jr., representing the Ford cars, has opened a new salesroom at 47 Columbus Ave., Boston.

The Boston Motor Co., 45 Columbus Ave., Boston, has enlarged its quarters and installed new machinery especially adapted for high grade repair work on motor cars.

The Orian Supply Co. has fitted up large offices and salesrooms at 43 Columbus Ave., Boston, where it will carry a large line of American and foreign automobile parts and sundries.

The Boston branch of the Columbia Lubricants Co. has been removed from 66 Stanhope Street to larger quarters at 59 Long Wharf, Boston, C. G. Stowe continuing as manager.

Alfred Reeke and Charles Weber, of Milwaukee, are planning a trip to the Louisiana Purchase Exposition at St. Louis next summer in a four cylinder Toledo car.

The Neustadt-Perry Co. has been reorganized and will hereafter be known as the J. H. Neustadt Co. The business will be continued as before at 826 S. 18th St., St. Louis, but on a more extensive scale.

A lecture on "The Uses and Abuses of Automobile Tires" was given before the Boston Y. M. C. A. Automobile School on January 23 by William T. Helfer, manager of the Boston branch of the Diamond Rubber Co.

It is announced that "Johnny" Fisher, the well-known bicycle racing man, has been engaged to drive the big Pope-Toledo racing car that has been ordered by Orlando Weber, of Chicago and Milwaukee. The car will be raced under the colors of the Chicago Automobile Club.

F. B. and Edward L. Weston, trading as the Automobile Storage & Repair Co., of Washington, D. C., have given a bill of sale of chattels at their garage, 1319 L. Street, N. W., to the Automobile Storage & Repair Co., Inc. The Messrs. Weston will continue to be identified with the corporation.

The course of lectures on electric vehicles was begun in the Boston Y. M. C. A. evening institute on March 1 with a lecture on the practicability, cost and efficiency of "Electricity as a Motor Power in Vehicles." The second lecture, given March 8, dealt with "Storage or Secondary Battery"; the third, March 22, will be on the subject "Application of Power to Wheels," and the fourth, March 29, on "Charging Outfits." The drafting and shop courses will be continued.

C. S. Henshaw, New England representative for Thomas cars, has fitted up new salesrooms at 288 Columbus Ave., and has a repair department at 179 Clarendon St., Boston, Mass.

The Mobile Carriage Co., of San Francisco, which has just started an automobile livery service, is using Pierce Arrow touring cars, which are intended especially for the use of visitors from the Eastern States.

Abel Alfred Borit, who was in the United States last autumn in the interest of the Henriod combined change speed gear and rear axle, is now located at 69 Avenue de la Republique, Paris XI, France.

The Birdsall Motor Company, in which E. T. Birdsall is the prime mover, has closed a contract with the United States Government for two motors, each of four cylinders and supplying twenty-four horsepower.

The Clark Mfg. Co., of Moline, Ill., has produced an automobile that under test has proven very successful. The company expects soon to complete its organization and to place on the market "a gasoline machine that runs as quietly as an electric and with no back pressure on the engine."

Wright & West, the automobile dealers of Stockton, Cal., have contracted to deal in Rambler automobiles exclusively in the San Joaquin Valley during 1904. They have a new building, two stories high, which is one of the finest devoted to automobiles in any California town except San Francisco.

Arrangements have been made between the officers of the New York and Chicago Road Association and the president and directors of the Chamber of Commerce, of Erie, Pa., to hold a convention in that city March 16 and 17. Practical road builders and representatives from along the route will be in attendance and the building of an object lesson road will be discussed.

Some of the departments of the big Bridgeport, Conn., plant of the Locomobile Company of America have undergone considerable alteration this winter, the facilities of the blacksmith shop and drop forging room having been greatly increased by the addition of new and improved machinery; several new hardening ovens having been installed and some new grinding machines received. The grinding machines were needed for fine work in finishing hardened shafts used in the new Locomobile gasoline touring cars. All departments of the plant are working overtime with additional men, and the prospects are for earlier deliveries this spring than ever before.

F. A. Jacobs, of San Francisco, formerly vice-president of the National Automobile Co., has gone into new quarters at 1331 Market St., at the corner of Tenth, in the building originally constructed for a panorama and later occupied by T. H. B. Varney, a bicycle agent. Mr. Jacobs is agent for the Rambler automobiles.

The capital stock of the A. L. Dyke Automobile Supply Co., of St. Louis, has been increased to \$25,000 and a charter has been granted by the State of Missouri. The company has taken the entire building, of which it formerly occupied only one-half. The officers are as follows: A. L. Dyke, president and general manager; Rob. Britton, vice-president.

Plans are maturing for the formation of a company in Milwaukee to manufacture heavy motor trucks. Although a considerable amount of money to advance the scheme has been subscribed by Milwaukee business men and capitalists, it is said that the greater part of the backing will come from eastern parties who own or control the patents. Options have been secured on factory sites in several suburbs of Milwaukee. It is said that S. A. Titsworth, western agent in Chicago of the Macmillan Book Company, is one of the promoters.

"Will exchange new — touring car for any good gasoline runabout. Address box —" was an advertisement that appeared in one of the New York dailies recently, and although half a dozen replies were sent, no answer was received, and it would appear that it was an unfair attempt to injure the car named. Anyone reading the ad would immediately figure that the advertiser had bought a machine which had proven unsatisfactory and he was willing to exchange it for a machine of one-third its value. As the replies had to be sent to a box in the newspaper office, there was no way of finding who was responsible for the ad.

John Wanamaker has recently taken the agency for the Premier cars for Philadelphia, New York and surrounding territory, including the States of New Jersey, Delaware, eastern Pennsylvania, eastern New York and western Connecticut. The Premier line consists of a four-cylinder air-cooled 16-horsepower car, and a four-cylinder, 40-horsepower, watercooled car. The entire stock of 1904 model Searchmont automobiles has been bought by Wanamaker's. These cars have a number of improvements over the 1903 Searchmont, important among which are improved bearings in the transmission case, improved motor, and Whitlock cooler, the latter giving the car an entirely different appearance.

Melange of Metropolitan News.

According to present plans there will be an automobile meet at the Empire City track on Decoration Day. The management will require that contestants in the star event shall travel in close to record time or else forfeit the prize money.



Rumors that S. M. Butler would not be secretary of the A. A. A. racing board again this year have raised a protest from those interested in racing affairs. Although a member of the board, it is said that he is to be supplanted by another. Mr. Butler handled racing affairs judiciously last year in his position as secretary and is considered one of the best informed men on competition in power-driven machines. Mr. Butler has been out of town for the past few days and his views could not be ascertained.



At its next meeting the New York Automobile Trade Association will plan to have an amendment made to the present bill permitting livery stable keepers to place a lien on the vehicles of delinquent owners that will give the same protection to the garage owner. Should an owner fail to pay for his horses' keep or the storage on his carriage the stable keeper can give written notice and retain the property until the bill is paid or place a lien upon it.

President Owen of the association will have a copy of the bill at the next meeting and an effort will be made to have the law amended so that it will cover automobiles.



Sixteen members of the Automobile Club of America have notified Secretary Butler of their intention to attend the International Cup Race in Germany June 17, and they will receive the special car tags, marked "G. B.," which must be carried when in Germany.

Following are those who will cross the water to see the speed contest: Robert Walton Goelet, Osborn W. Bright, George E. Sykes, Jules S. Bache, Col. John Jacob Astor, E. R. Chapman, Harry S. Woodworth, L. H. Kittredge, Walter C. Runyon, Peter Cooper Hewitt, Clarence A. Postley, Harold D. Corey, Dr. J. Grant Lyman, W. S. Hilles, Isaac Stern and Alden Sampson, 2d.



To demonstrate the value of its vehicles, the Consolidated Motor Company will send its St. Louis exhibit over the regular highways instead of by freight. The trucks and touring cars will be in charge of W. H. Owen.

President Cryder will enter two or three motor trucks in the commercial vehicle test of the A. C. A. next month. There will be at least one vehicle each in the 2,000 and in the 3,000 pounds classes. The trucks themselves weigh considerably less than a ton.

Gasoline cars will be marketed this fall, as well as a two-cylinder touring car made under German patents. The friction drive will be used exclusively on the Moyea trucks and on the pleasure cars.



Arrangements were made on Wednesday for a party to visit Virginia Beach on a tour of inspection with the view of holding the cup race elimination trials and a two weeks tournament on the course. In the party will be Harlan W. Whipple, president of the American Automobile Association; A. R. Pardington, chairman of the racing committee, and S. M. Butler, secretary of the Automobile Club of America. Lee Straus will have charge of the party. Alexander Fischer and F. A. La Roche will each send a machine for trials on the beach.



Jefferson Seligman, treasurer of the Automobile Club of America, has ordered a 20-horsepower Martini car from Alexander Fischer. Another buyer of this car, which is of Swiss manufacture and new to this country, is John W. Chapman.



Augustus Post, chairman of the touring committee of the American Automobile Association, will take a trip to St. Louis to look over the course for the national run of next July. He will start just as soon as the weather is favorable. Charles Glidden of Boston, and H. W. Smith of Syracuse, have accepted places on the touring committee and a member of the Cleveland Club will be selected at the next meeting of that organization.



C. Allen Hayden, of New York, was in Syracuse last week and contracted with the H. H. Franklin Mfg. Co. for a touring car of special design to be used by himself and E. P. Bull, also of New York, in a tour through Europe this summer. The car will have a body for two on the same chassis as the company's 1904 tonneau, but is required to have a motor of 24 horsepower. One of the stipulations of the contract is that the car must be capable of at least fifty miles an hour. While in Europe Mr. Hayden and his companion will see the Gordon Bennett race, after which they will tour through the British Isles.



George F. Gilbert, who has been connected with the H. W. Johns-Manville Co. since 1896, as general sales agent for northern and western New York State and as representative of the company in connection with work for the State government, died of typhoid fever at St. Mary's Hospital, Rochester, on January 12. He was forty-two years of age, and is survived by his mother, a brother and his wife, formerly Miss Mary Halleran of Rochester.

Frank Eveland, agent for the Autocar in New York, has been automobile driving on the ice up the Hudson River and declares it to be fine sport with practically no limit to speed possibilities.



Thomas Edison, the inventor, is preparing a table showing the air resistance of cars going at speeds from sixteen to eighty miles an hour.

Auto-Boat News Notes.

According to the rules for the international motor boat trophy race, it is quite possible that boats may be nominated by the American Power-Boat Association, as well as by the Automobile Club of America. The rule provides that there shall be not more than three vessels from each country and that these vessels shall be selected by a recognized club of that country. By stating that "a recognized club" could make entries instead of confining it to one club, there is a reason for the statement made by a prominent yachtsman that entries could be made direct from any recognized yachting club.

The Automobile Club of America has already received two entries for the race, having been invited by the Automobile Club of Great Britain and Ireland, which is handling the affair. The club will hold elimination trials, if necessary, and it would seem that although entries may be made through the American Power-Boat Association, all the contestants would have to compete in the elimination trials held by the A. C. A. It is expected that word will be received from abroad within another week stating definitely through whom entries must be made.



There has been some talk of a dispute in the control of motor boat racing which probably will be settled by the American Automobile Association controlling the races between automobile boats, while boats of other types will go under the rulings of the American Power-Boat Association.

It is the opinion of Chairman Pardington of the A. A. A. racing committee that his organization will hold closed races open only to fast automobile boats under their own rules, leaving to the A. P. B. A. the control of all other events.



J. H. McIntosh of the Columbia Yacht Club says he has received a cable from Linton Hope, honorary secretary of the American Motor Association of England, stating that members of the American Power-Boat Association were eligible and suggesting that they send its entries direct.



It has been stated mysteriously that a millionaire yachtsman has made a secret entry through the American Power-Boat Association for the international motor boat trophy race.

s
a
s
t

-
f
y

-
e.
y
s
t
y
a
y
d
e
t
t
y

s
e,
e
h
d
it
e
at
re
y
ill
er
n-

te
h
an
ne
le
ne
o-

on
is
en
eir
ne

ht
m
he
d,
an
nd
ct.

a
ret
at
or